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Institute for the Blind
224 Great Portland Street, London W1N 6AA

Gardening without sight

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GARDENING WITHOUT SIGHT

by

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Royal National Institute for the Blind
224 Great Portland Street, London W1N 6AA

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Letter request 9/7/82

The Royal Horticultural Society welcomes the appearance of this new booklet.

The wide range of sound practical advice that it contains should do much to increase the interest and skill of the many visually handicapped people who enjoy gardening.

C D Brickell
Director
Royal Horticultural Society

FOREWORD

It is my pleasure to include a few words about the aims of the revised booklet for visually handicapped gardeners. Its contents incorporate many of the techniques evolved to assist such gardeners during the past few years. These, together with the well-tried and tested aids and methods already in use, form the basis of this present guide.

Most of the techniques have been put to practical test at the popular Weekend Courses for visually handicapped gardeners arranged by the Southern and Western Regional Association for the Blind, and in other teaching situations.

It is a privilege and pleasure to be associated with efforts to increase enjoyment and efficiency in gardening for visually handicapped people. The value of the initial good work is evident in the expansion of present developments, and I am happy to add encouragement to this growing interest.

K. J. Spackman
Principal (retired)

The Norwood Hall Institute of Horticultural and
Agricultural Education

INTRODUCTION

This booklet is written to help anyone visually handicapped who is interested in the cultivation of plants, whether outside in the garden or on an allotment, or indoors in the greenhouse or simply in the dwelling-house. Opportunities for work will vary from one individual to another. Some people have outdoor space available and the physical strength to make use of it, while others are restricted by lack of any garden or by physical disability in addition to visual handicap. However, from the allotment holder to the flat dweller, anyone who enjoys cultivating plants need not give up this pleasure **only** on account of visual handicap, because there are many ways of solving problems that arise through lack of sight.

The aim of our booklet GARDENING WITHOUT SIGHT is to describe some of the methods and aids which various inventive blind gardeners have devised to overcome particular difficulties. The aids are all home-made, and are the result of personal experience. Where we have included any suggestions requiring more extensive trial, a note is given in the text to this effect. In any case, you are not expected to follow every idea that is described. Some may be useful to meet your needs, others you may reject. Alternatively, you may find in the following pages some suggestions that you might like to build on, adapting and developing them to suit yourself. Bear in mind that all our suggestions conform to the principles of good gardening, so any adaptations you make should also adhere to these principles.

VISUAL HANDICAP

The inventive ideas for special aids described in GARDENING WITHOUT SIGHT were nearly all contributed by totally blind gardeners, which is a thought that anyone newly registered as blind may find encouraging. In general, the words "blind gardener" will be used throughout this booklet, not for the purpose of excluding those who have retained some degree of vision, but to emphasise the fact that there are many totally blind people able to become successful gardeners. Some of these work alone, some work with a sighted partner.

SELF-RELIANCE

It is well worth while aiming at self-reliance in gardening—and it is in this endeavour that special home-made aids are helpful, especially by anyone who has no useful vision. Blind people living alone or with a partner who is also visually handicapped must, of necessity, be self-reliant. This need was aptly expressed by the blind and deaf gardener who devised the multi-purpose use of right-angles in gardening. He said "Sighted people cannot always come just at the time I need them, so I work things out for myself."

The same situation arises even when the work is shared with a sighted partner. It is not always convenient or possible to be working together in the garden at the same time, and on such occasions one appreciates the value of self-reliance. Apart from this practical aspect, there is a tremendous sense of satisfaction in achievement—and personal satisfaction is not the only result. The more a blind partner can achieve without assistance the more normal the partnership.

For people unaccustomed to working without sight such satisfaction may seem far distant. If this is your feeling do not be frustrated by any failures at the beginning. Continue your efforts, because blind people in particular find that repeated practice is the key to success. To quote the confession of a totally blind lady who can now push her lawn mower in straight lines "I went all over the place at first, but it came with practice."

NOTE

GARDENING WITHOUT SIGHT contains many ideas from the 1978 revised edition of A MANUAL FOR BLIND GARDENERS. It covers a number of improvements, with the addition of recent fresh ideas and some necessary amendments to the former text. Whether old or new, **all** the suggestions described hinge on the two basic needs of every visually handicapped gardener:

(a) orientation, whether on an open area out of doors, or within more confined space for indoor gardening, and
(b) ease of access to all plants in garden beds or plots.

Happy gardening to everyone!

ADVICE TO BEGINNERS

Many visually handicapped people were keenly interested in gardening before their sight failed and feel themselves to be rather like beginners, because loss of vision demands unaccustomed methods of working. On the other hand, there are people with no previous experience of gardening who start for a variety of reasons, perhaps because of changing home circumstances, perhaps because of awakening interest. The latter are without doubt beginners. However, whether in your case you are learning different methods of working, or whether for you gardening is a completely new activity, the following advice will be helpful:

1 Don't attempt too much at once. Taking into account that your rate of work will be slower than when you had sight, make a start in a small section of the garden. The area and scope of work can be increased by stages.

2 If you are starting the work with someone else, have some part of the garden to yourself if possible and do all the work in it yourself. If you need any help, ask for it for some particular job and make sure that help is given for that job alone. With the best will in the world your partner with sight can be tempted to fork in a little fertiliser here, to tie something up there, or hoe the weeds somewhere else, doing all this without telling you. Incidental help like this, given without your knowledge, can lead to confusion and give you a false impression of the condition of your plot and the needs of your plants.

3 If you have missed patches of work because you cannot see, or have made mistakes, take advice, but do not let anyone else put the error right for you—do it yourself.

4 If you cannot have your own section of the garden, concentrate on some special inerest, such as vegetables, herbs, chrysanthemums, etc., and extend the range of interest when opportunities occur.

5 Always work from a straight edge (see Section under heading THE GARDEN PLAN). Use tools as recommended on page 5 and equipment described on page 6. Make access to all your plants easy, either by having narrow flower beds, paving slabs on wider beds, or short vegetable rows (explained later in this booklet).

6 **Very important** Equip yourself with knee pads or a kneeler, as much of your work will be done on your knees. Be methodical and tidy. Keep small tools in a bucket by your side and rubbish in another bucket (Fig. 1).

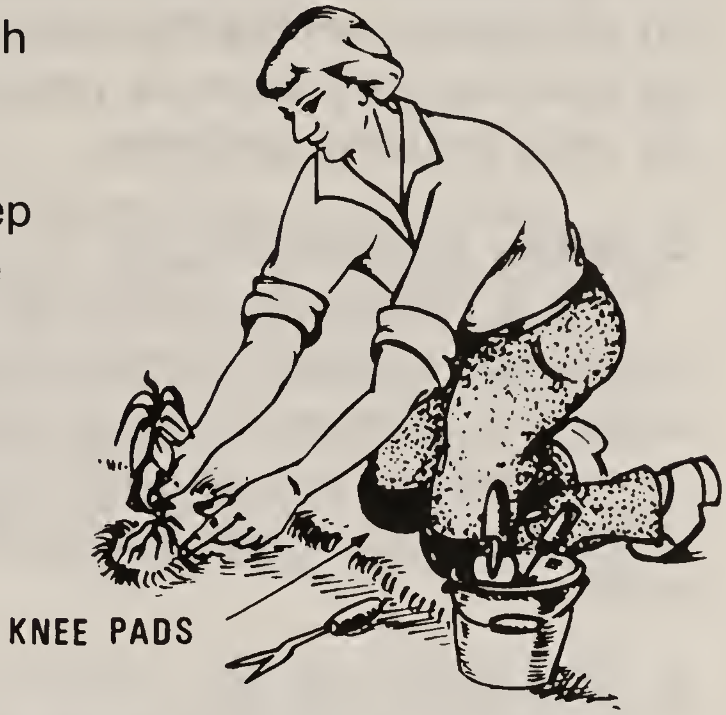


FIG. 1

TOOLS AND OTHER EQUIPMENT

GENERAL TOOLS

The only long-handled tools in general use by blind gardeners are the spade, fork and rake. A hoe is not suitable, with the exception of an onion hoe, which has a short handle.

Among the short-handled tools a hand-fork is most necessary, and a trowel is, of course, essential. There are also hand cultivators on the market which can be useful.

PARTICULAR TOOLS

There are two other tools which many blind gardeners like. They can be recommended, so can be added to the general stock if desired. These are:

1. **A bulb planter** (Fig. 2)

This can be used in the garden for small flower and vegetable plants as well as bulbs. It takes out a core of soil (which it retains) leaving a planting hole with compact sides. One type of

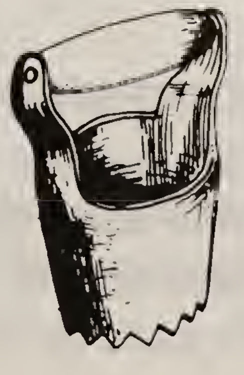


FIG. 2

planter has a complete cylinder without division. A newer type has a cylinder made to open by means of a spring. At the time of writing the latter type is so new that we cannot as yet estimate its value for blind gardeners.

2. **Daisy grubber** (Fig. 3)

This is still on the market, although not always available in every garden shop. It is intended for long-rooted lawn weeds, but some blind people like it for uprooting certain weeds in flower beds.

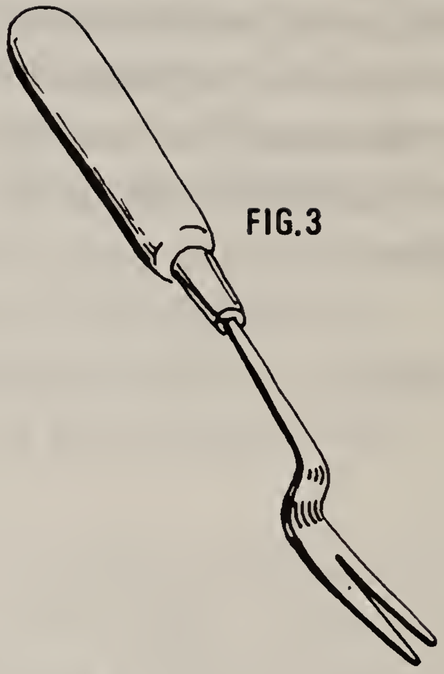


FIG.3

3. **A trundler** (Fig. 4)

This is not a tool, but it can be an asset of great advantage in a large garden. It can be found available in some Garden Shops and Centres, and is a type of barrow, with two wheels and a "pram" handle. A blind person can therefore push it with one hand, leaving the other hand free. The end of the trundler slopes at an angle, useful for emptying. With a length of just over a metre it will take garden tools, and with a width of just over half a metre it can be taken through narrow places, such as the doorway of a greenhouse. A "handy-man" blind gardener made one himself and found it most useful in his long garden.

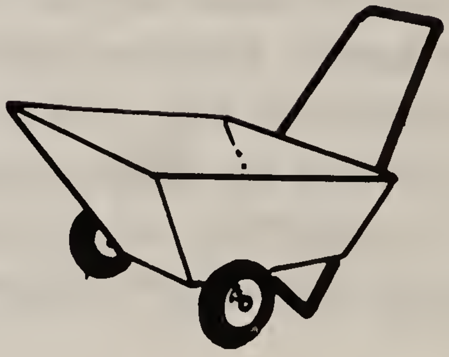


FIG.4

OTHER EQUIPMENT

In the Section ADVICE TO BEGINNERS we recommended straight edges to flower beds and vegetable plots, in order to make work easier. Further details on this topic are given in our next Section under the heading THE GARDEN PLAN. Straight edges are a helpful aid to planning the right planting distances for flowers, shrubs and vegetables. There can be no dispute that careful planning will make a garden attractive, give plants room for healthy growth and prevent wastage of valuable space.

ESSENTIAL EQUIPMENT

A visually handicapped gardener needs some simple and reliable equipment for this planning and the measurement of correct planting distances. Some blind people work by methods they have found suitable for their individual needs. One such method was devised in 1968 by a totally blind gardener. It has proved so reliable, and it has so many possibilities, that tutors are now recommending it for general use by blind gardeners. They regard the equipment required as essential.

The equipment consists of two right-angles (Fig. 5), marked with studs for planting distances, laid flat on the ground, flush with the straight edge of the garden bed or plot. They can be made with plastic piping or wood, according to choice. Either material can possibly be obtained as off-cuts. Directions for construction will be given in a later section.

RIGHT ANGLES

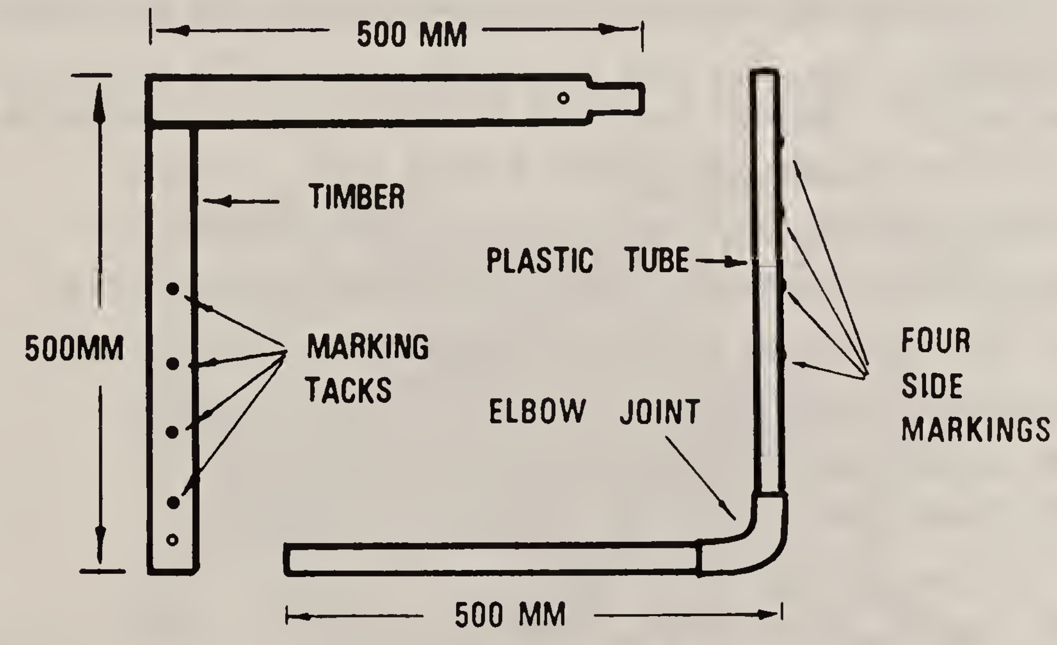


FIG.5

The varied uses of these right-angles will be described in many of the later sections of our booklet, but here are a few indications of their practical value:

1 Two right-angles, placed at opposite ends of a flower bed can be joined by a cane or garden line to aid the measurement of planting distances, both inwards from the straight edge of the bed and sideways between the plants.

2 Used singly or together they can assist the planting of shrubs.

3 They can help to square corners.

4 Joined by a connecting bar, they enable a blind gardener to work straight when digging, forking or raking.

5 Placed together they will mark an area on a lawn for spreading fertilizer or sand.

There are still more uses for these right-angles, which will be discovered as experience develops.

A SAFETY PRECAUTION

Accidents have occurred when people bend down in the garden and catch face, neck or an eye on the top of the support cane of a plant. It is true that at Rehabilitation Courses visually handicapped people are taught to squat down with straight back instead of bending down. However, not everyone is able to attend a Rehabilitation Course. Even for those who do attend, there may be moments when this wise practice is forgotten, or a sense of direction has suddenly been lost—or, perhaps, the gardener is unable to squat.

As a precaution against such an accident we can offer a hint for covering the top of the cane with a little pad. It costs next to nothing and is very easy to make. It should be said that many methods of covering tops of canes have been tried, but none has proved completely satisfactory.

The following simple method seems to be the best: Cut off the foot of a stocking or tights below the heel. Stuff the toe with cut-up pieces from the remainder of the garment. (This must be done quite firmly, or the cane will be felt through the pad.) Having made a good, solid ball, fit this on the end of the cane and hold the loose part of the stocking foot tightly to the cane. Make sure that you cannot feel the end of the cane through the pad. Now, **very tightly**, bind to the cane

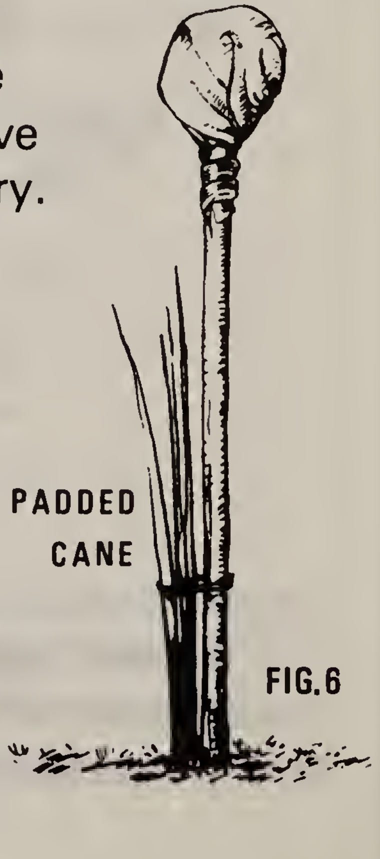


FIG.6

the loose part of the foot that you are holding round it. This will keep your little pad in position (Fig. 6).

It is a good plan to bind with white insulating tape. Insulating tape makes a tight binding, and if white is chosen it is a guiding mark for people with a little sight.

THE GARDEN PLAN

Life has its changes, and in the course of these circumstances many of us have to work out a suitable plan for the garden. Need for a plan may arise through moving to a newly built house. On the other hand, the move may be to a house with an established garden that requires alteration. Another of life's changes may be that failing sight calls for some practical adaptations in an existing garden. Plans are always an individual matter, so cannot be dictated, but there are some points which merit general consideration, such as:

PATHS

As a rule it is wise to avoid having paths which curve, as they can lead to orientation difficulties. Straight paths are easier to negotiate, although it should not be assumed that a continuous straight path from end to end of the garden is necessary. The direction of a path can be changed at different points and the changes suitably marked.

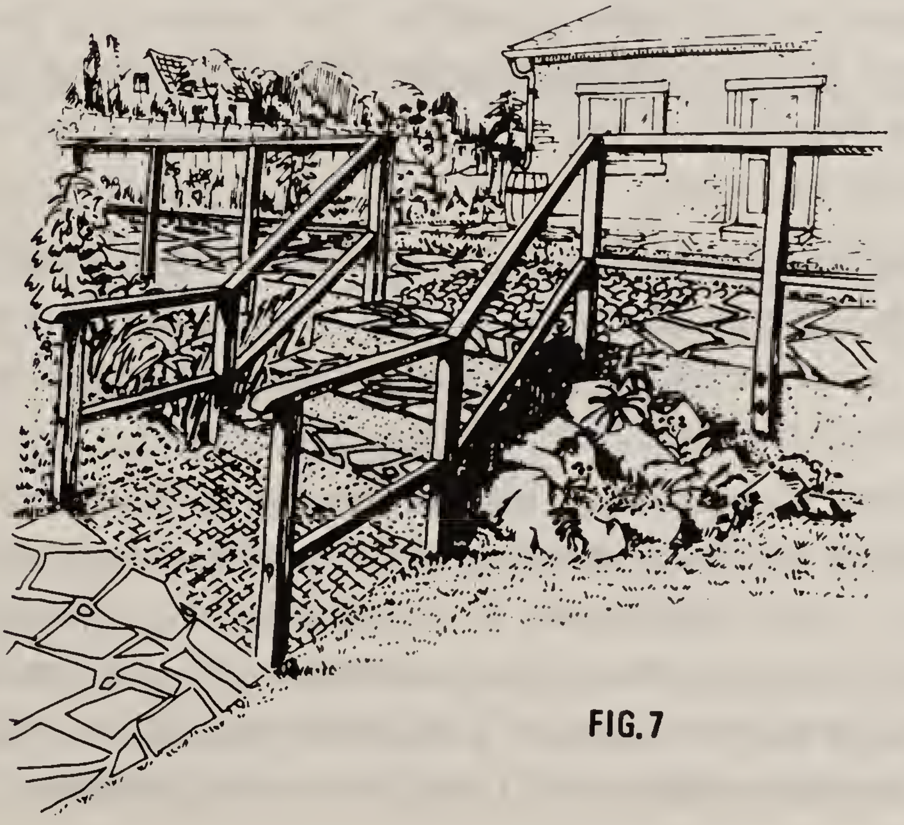


FIG. 7

SUITABLE LANDMARKS

1 **Where a path changes direction** the place can be marked by some garden feature in the form of stonework, or by a small tree or shrub. Alternatively, the texture of the path can be changed—and for this there are choices between crazy paving, slabs, concrete or gravel.

2 **If there must be steps anywhere** a hand rail should be erected. This should begin at least a metre along the path before a downward flight, even if that flight consists of no more than two or three steps.

FLOWER BORDERS AND BEDS

Width Borders should be narrow, at most no more than a metre across. This is necessary to bring all the plants within reach, as a blind gardener has to work by touch from a kneeling or squatting position, using short-handled tools.

Edges Some blind gardeners like to edge borders and beds with a low kerb. Others prefer a natural boundary. All agree that plants should not be set too close to the edge, where they will risk damage. It must be said in favour of a kerb that it does provide a guiding mark, and it also helps to prevent soil spilling over the path.

Straight edging Whatever the view about kerbs, there is no doubt at all that edges need to be kept straight. This ensures that there is always an accurate guideline for measuring the position of plants. A hard path of slabs or concrete will make a good edging, and will have the added advantage of providing a dry surface for the gardener when kneeling.

Plan of flower beds Beds planned as islands need not, of course, be as narrow as borders. The most suitable shape is rectangular, and the gardener must be able to reach at arm's length to the middle of the bed from either side.

Easy access to shrubs This is important, particularly in a rose bed, in order to facilitate picking the blooms, dead-heading, pruning and spraying. One suggestion is to lay stepping stones through the middle of the bed. Another idea worked out by a totally blind lady was to lay slabs in the form of a printed capital letter X (Fig. 8). She had a wide border which could not be made narrower, and there

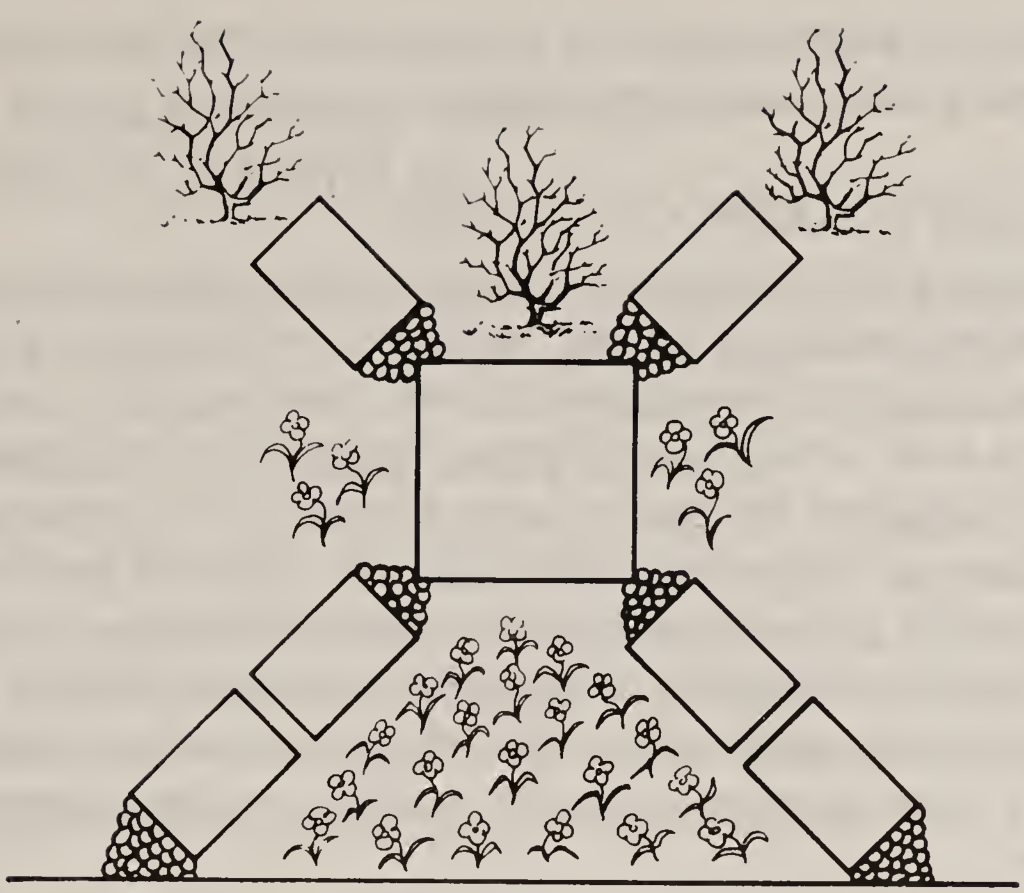


FIG.8

were rose bushes at the back. She made the lower part of her letter X wider than the upper part. The narrower upper part gave her access to the rose bushes. The wider lower part provided beds for other plants, all of which she could reach. This pattern was a good idea, because it not only helped her to work easily, but it presented an artistic appearance to her sighted friends.

PLANTING IN FLOWER BORDERS AND BEDS

DISTRIBUTION OF SCENT

Everyone, whether blind or sighted, enjoys fragrance in the garden, but it is a mistake to confine it to one area. The fullest appreciation can be gained if scented plants are:

(a) in different parts of the garden,
(b) giving their perfume in different seasons.

Remember that a wall will help to enclose fragrance, preventing it from drifting away on the wind.

The distribution of scented plants in different parts of the garden can also be of practical use to anyone visually handicapped. What could more pleasantly lighten the task of weeding than working from the lavender to stocks and from the stocks to the heliotrope, when one is battling with weeds in a border?

HEIGHT AND COLOUR OF PLANTS

Common-sense tells every good gardener that the **tallest** plants must be at the back of a border, or in the middle of an island bed. **Colour** also, both of flowers and leaves, needs to be considered if a garden is to look attractive to sighted friends and neighbours. For the sake of enjoying the garden with friends, blind gardeners will naturally want to take colour into account. This will involve a little planning, which some visually handicapped gardeners may have enough remaining vision to undertake themselves. Others will either rely on memory or seek advice. By whatever means a colour plan is obtained, it does have an important bearing on the appearance of the garden.

SHAPE, SIZE AND TEXTURE OF LEAVES

No help is needed, however, when selecting plants for the variety which their shape, size and texture of their leaves can provide. Leaves are so satisfying to touch, from those that are tough and glossy to the feathery ones, and others like tall blades. As touch develops with experience, their different textures can give immense pleasure, and the garden border or bed can be planned to display their great variety of form. This can become a really interesting study.

EASY LOCATION OF PLANTS

Some blind gardeners make a separate island bed for each kind of plant, for example, dahlias in one bed, annuals in another, and so on. This formal style is entirely a matter of choice. It is not essential. Plants can be arranged in groups of three or five. Such groups are **easy to locate.** They also provide variety, particularly in a border, and this type of arrangement is in very general use by gardeners.

SIMPLE MEASURING AID FOR THE FLOWER GARDEN

All plants need enough space for healthy growth, so correct planting distances are important. The use of ground space needs to be planned before planting begins. If not, there may be overcrowding, or on the other hand, possible **waste** of space.

The measuring of planting distances need not, however, become a daunting thought, even to a visually handicapped **beginner**. The right-angles mentioned earlier in this booklet provide the necessary help. They are easy to make, reasonably cheap, and simple to use. They will assist the measuring of all planting distances, whether from the edge of the garden bed or between the plants.

NOTE: USE OF METRIC TERMS

The following system is adopted in our booklet:

1. Larger measurements are all made in metres and half metres.
2. For smaller measurements (including those which involve half a metre) the term ''millimetre'' is used. This is horticultural practice because small measurements can then be expressed without using decimal points.
3. Planting distances are given in approximate metric measurements arrived at by converting from Imperial measurements. The reason is that planting space does not alter. The reckoning is based on 75 millimetres being approximately equal to 3 inches. At the time of writing this also is horticultural practice.
4. Multiples of 75 mm. are worked out accordingly. The mathematical discrepancy incurred by this reckoning is accounted for in the space allowed at the edges of plots.

CONSTRUCTING THE RIGHT-ANGLES

You will require:

2 metres **rigid** (22 mm.) plastic water piping
2 elbow joints to fit
8 self-tap screws (the shortest No. 6)
a little special adhesive.

Cut the two-metre length of piping into four pieces, each half a metre long, making sure that the cut is **straight and clean.** This is important.

Take two of the four pieces and make holes with a bradawl in each at 75, 150, 225 and 300 millimetres from one end of each piece. The holes must be in a straight line, leaving a stretch of 200 mm. without any holes at the opposite end of the piping. Insert the self-tap screws into these holes and you have easy-to-feel marks for a variety of planting distances.

Final construction. You now have two pieces of piping with marks for measuring, and two plain pieces. Take the two elbow joints and fit one marked piece and one plain piece into each joint. You have made two right-angles (Fig. 9).

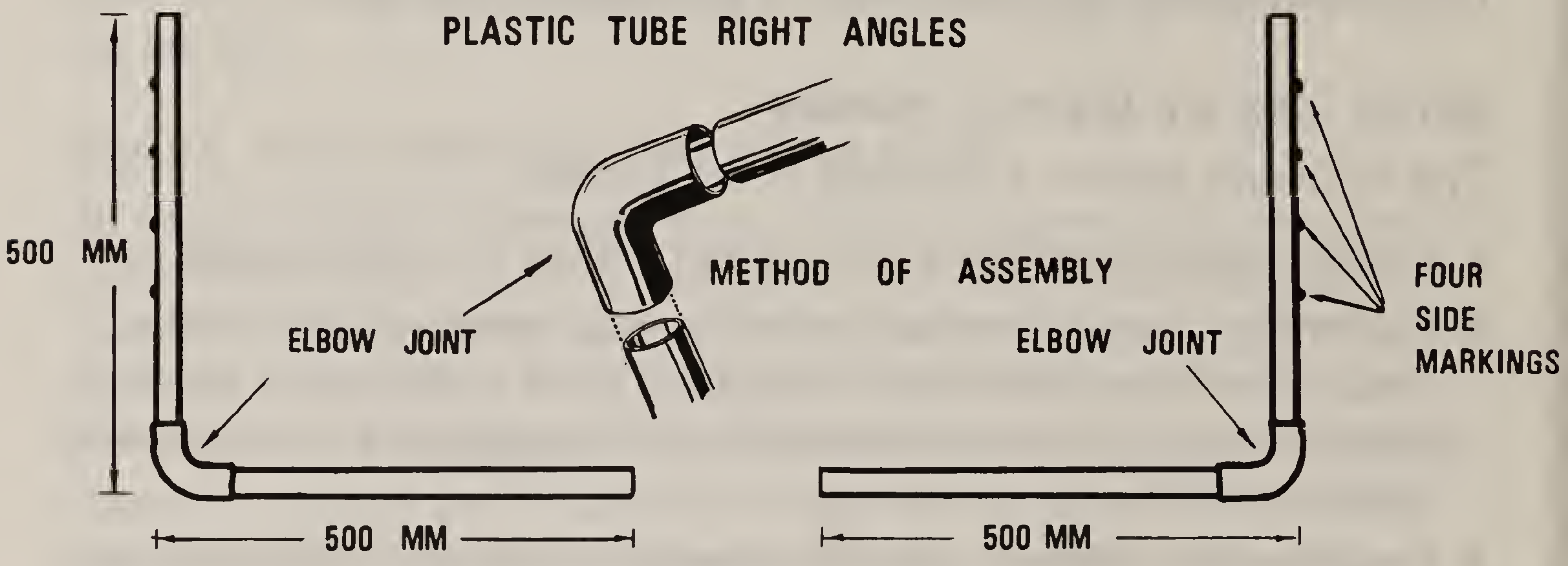


FIG.9

Make sure that the marked pieces are fitted so that the 200 mm. without any tap-screws is nearest the elbow joint. Then also give the marked pieces a slight twist, so that you can feel the marks on the **outside** of the right-angle, not on top. (If they are on top you will not be able to feel the marks when you turn the right-angle over.) This is the position for the arms of your right-angles when finally fixed with adhesive. The adhesive to use is solvent cement (the special type for ABS and PVC). You really need sighted help at this stage, because the cement compacts literally in a second, immediately making a fixture that nothing will move.

It is necessary to fix your right-angles in this way, as they can otherwise lose their correct shape. A right-angle that is not accurate is useless. If correct, you have reliable measurements for planting at

200, 275, 350, 425 and 500 millimetres from the edge of your border or bed.

PEGS

You will need four pegs to anchor your right-angles in position while you are working. Metal is the best material for pressing easily into the ground. You may possibly have a sighted friend who would be able to bend four pieces of metal over to the shape of a miniature hooked walking stick. The hook would then fit over the piping and hold it down.

Alternatively, four 150 mm. nails could be driven through four pieces of wood crosswise. These could serve as pegs equally well. (Blunt the points for safety.)

RIGHT-ANGLES READY FOR USE (Fig. 10)

To use the right-angles as an aid, place them on the ground with the two plain arms flush with the straight edge of your border or bed. The right-angle on the left will be in position just like a printed capital letter L. The right-angle on the right will face the opposite way, like the letter L printed backwards. The two arms you have marked with self-tap screws will give you measuring distances **inwards** from the straight edge of your border or bed.

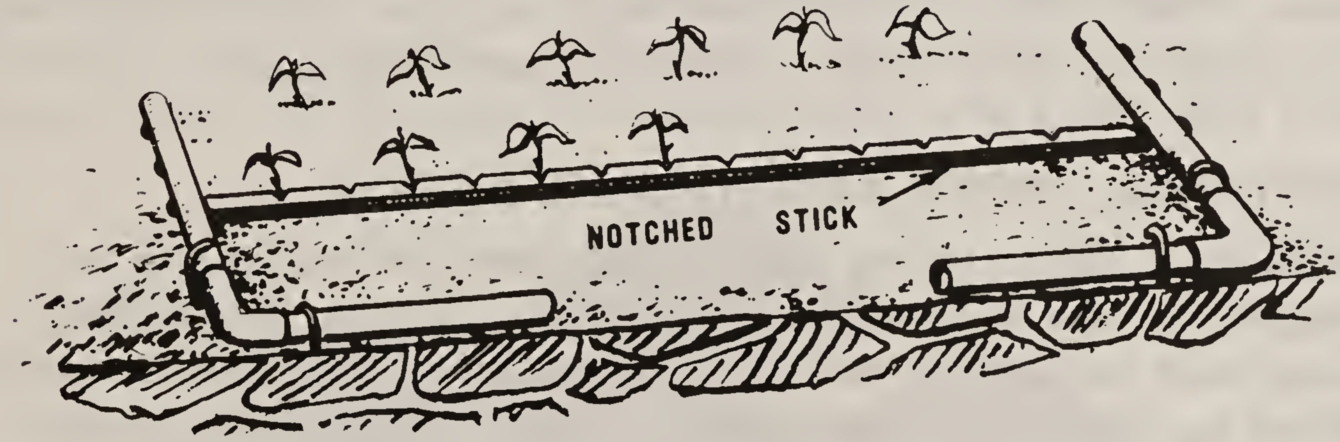


FIG. 10

MEASURING DISTANCES BETWEEN PLANTS

What about the **space** between your two right-angles? This can be any length, according to your plan. You will need a cane or notched stick, the same length as the space, to link the two right-angles. The notches at suitable intervals along your stick will give you the correct measurements sideways between your plants.

You will need two more pegs to hold your cane or stick in place while you work. Peg it in position against the measurement marks you made with tap-screws on the arms of your right-angles. If you are working from a perfectly straight edge, these marks will be opposite each other. You will place your stick against whichever screw marks you choose for the correct planting distance from the straight edge.

READY FOR WORK

You now have planting distance **inwards** from the edge of your border or bed, and **sideways** between the plants.

PLANTING IN AN ISLAND BED

By way of example, suppose you are working on an island bed 1½ metres long and 1 metre wide. When you have finished all the planting on one side of the bed, you would then move your right-angles across to the other side to start work there.

PLANTING SHRUBS

Many people (sighted as well as blind) plant shrubs too close. When you have enquired the size to which your shrub will eventually grow, you will know the correct amount of space to leave for it in the garden. Then, when you are planting it, you can use the right-angles and measuring stick to plan sufficient room for growth.

ADDITIONAL NOTES ABOUT RIGHT-ANGLES

The 22 mm. plastic piping right-angles described so far will be adequate for use in the decorative garden, (that is, for planting flowers and shrubs and for various operations in the care of lawns). A blind gardener who works **only** in a decorative garden can be happy with this equipment. It is light and occupies very little space when stored away.

Gardeners who grow vegetables Gardeners who work a vegetable plot as well as a flower garden will find that 22 mm. diameter piping is rather small to feel through heavy boots. They will prefer piping of a larger diameter to use as an aid for digging, forking and raking. (Descriptions of how right-angles can be used as an aid on the vegetable plot are given later in this booklet.) The larger piping, although more expensive, can be an aid for use **anywhere** in the garden.

These gardeners might prefer even heavier material than plastic. In this case the equipment can be made of wood. Directions for construction with wood are given later, (in the VEGETABLE SECTION). Wooden right-angles are also suitable for use anywhere in the garden.

DESIGNS FOR PLANTING ANNUALS

All that was written in the previous Section has indicated how annuals can be planted in rows. This is the simplest method. However, the writer once visited a blind gardener who was trying something more ambitious. She was designing a **pattern**, planning it on the ground with sticks and string. String will easily tangle, so we decided to substitute it with curtain wire (the spring type that we use for net curtains). It is flexible, but substantial, and will last indefinitely.

This idea appealed quite widely to blind gardeners, so we can commend it to anyone who likes a little adventure. The wires can be cut to any lengths according to choice. Eyelets screwed into the ends provide holes for pegs, and any pattern can be planned.

A design that will readily conjure up a mental picture is fan-shaped. Plants will then grow in a semi-circle, with a dot plant in the

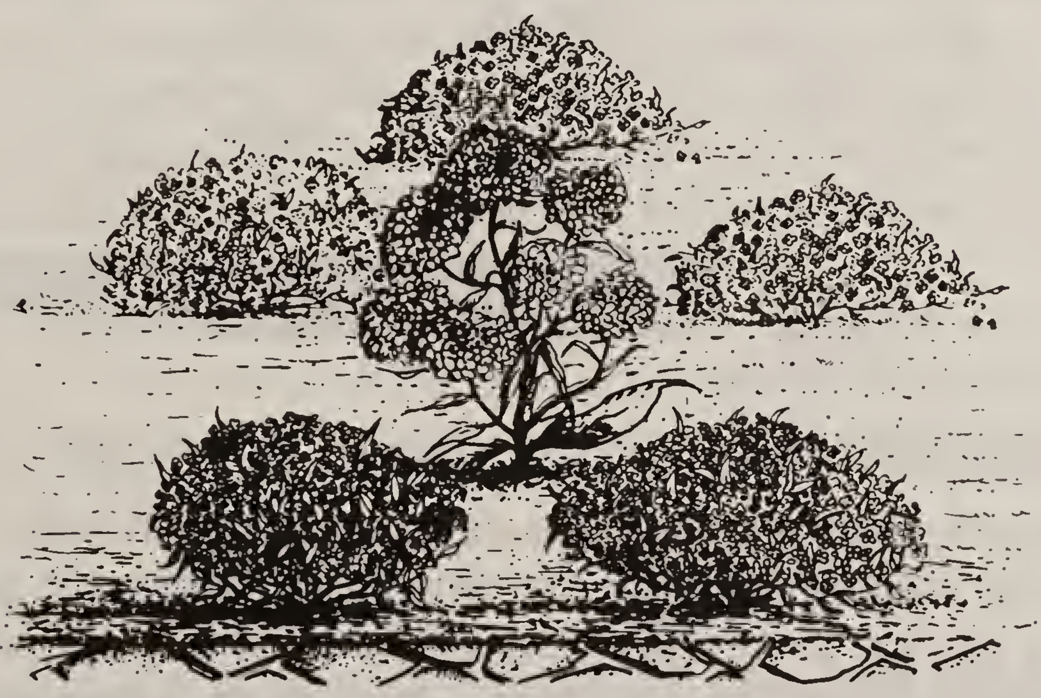


FIG. 11

middle. The annuals can be all of one kind, and what about a scented plant in the middle?

How can this result be achieved? You will need:

5 lengths of curtain wire
6 pegs (short meat skewers are suitable)
1 short measuring stick.

PREPARATION FOR A FAN-SHAPED DESIGN

If you want to plant your annuals 225 mm. apart you will need to cut the curtain wires a little **shorter** than this measurement. The slight reduction in the length is necessary because the wires will be arranged to form the ribs of the fan, with the annuals planted at their outer points.

The stick on your list of special equipment must be **exactly** 225 mm. For safety in using the six skewers, blunt the points and, if you wish, push a cork up to the handle end. Remember to screw eyelets in **both** ends of each curtain wire (10 eyelets altogether) and equip yourself with your plastic piping right-angles. All your **special** aids are now ready. We take for granted you have the necessary garden tools and plants to hand.

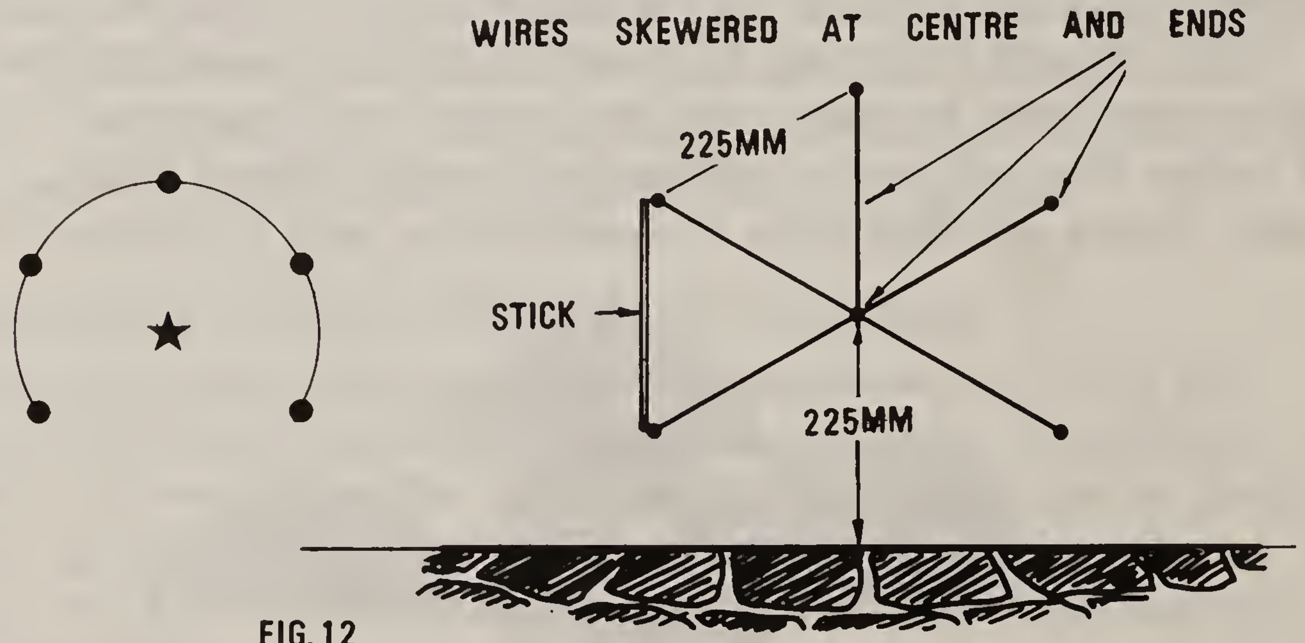


FIG. 12

HOW MUCH SPACE WILL THE DESIGN REQUIRE?

A professional gardener will make detailed measurements. These are necessary for display work but are difficult to describe in a **word** picture. As we are amateurs trying an experiment, a simple method, as a beginning, should be adequate. There must, however, be some guiding rules and definite measurements to obtain effective results and give your plants enough growing space. Try the following suggestions:

1. Thread all five wires on one skewer and push this into the ground a fair distance in from the edge of your border or bed. Spread the wires out like the ribs of a fan and roughly measure with your stick 225 mm. between all the outer points of the wires. This will prove:

(a) That the overall space for your design must allow for the growth of your five annuals beyond the tips of the fan ribs
(b) That the tips of fan ribs 1 and 5 will be nearer the edge of the border or bed than the central pivot of the five ribs
(c) That the middle rib must be at right-angles to the edge of your border or bed.

These are three necessary guide lines which **must** be measured.

2. Measure the overall space required for the design with the help of your two plastic right-angles and put markers of some kind at the extreme points.

3. Measure a central point at the edge of your border between these two markers. Mark this point so that you can determine the middle of your design. Your next step will be to place the design at the right distance from the edge of your border.

WHAT DISTANCE FROM THE EDGE OF THE BORDER?

The position of the design in this respect will also need careful measurement. Remember that the tips of fan ribs 1 and 5 will be nearer the edge of the border than the middle pivot of the ribs. Allow for plant growth beyond the tips of these two ribs.

Keeping this in mind, now take one of your right-angles and determine the **exact** spot for the middle pivot. Place the corner of your right-angle against the marker that you put on the border edge at middle distance between the two extremes.

One arm of your right-angle will, of course, be flush with the border edge. The other arm will give you a direct line to the spot for the middle pivot. Push the skewer that holds the fan ribs **firmly** into the ground at this spot.

SPREADING THE FAN RIBS

The measuring arm of your right-angle will now help you to fix the middle fan rib **exactly** in the middle—and perfectly at right angles with the border edge. Push one of your remaining skewers into the ground through the eyelet at the tip of the rib and you have a starting point for the planting distances of your five annuals. You can now remove your plastic right-angle, as it is no longer needed.

MEASURING THE PLANTING DISTANCES

You should have arranged the fan ribs so that there are two each side of the middle rib. Now take your stick and measure from the tip of the fixed middle rib to the tip of the first rib on its left. Push a skewer through the eyelet into the ground. With that rib securely in place you can measure from its tip to fix the next rib on the left in place. This done, repeat the operation on the right of the middle rib.

PLANTING THE ANNUALS

All is now ready for planting your annuals, one at the tip of each of the five ribs. This done, remove all the skewers and ribs, leaving a marker where you removed the central pivot. That is the spot for your scented plant—and when it is in you have completed your design!

WEEDING

The use of weed-killer is not recommended, especially as so many blind gardeners own guide dogs. The conventional method of weeding with a long-handled hoe is also problematic, because visually handicapped people need to work near the ground, where they can either feel or see the weeds. The only option left, therefore, is to hand-weed, using short-handled tools. These are described in the section on tools.

CAN WEEDS BE DISTINGUISHED?

It is a wise policy when weeding to keep to your own personal plot. You will then know which plants you are cultivating by their shape and texture of leaves etc., and can more easily distinguish the intruders. If you attempt to weed a plot which someone else has planted there can be disastrous results! It is difficult to keep pace with someone else's work.

FREQUENT AND SYSTEMATIC WEEDING

Frequent weeding is one of the secrets of success, and another secret is to do it methodically. For example, little landmarks along a border will divide it into sections, then the tedious job of weeding can be tackled section by section.

GROUND COVER

Growing ground cover plants is an accepted means of excluding weeds from a bare patch. It must be remembered, however, that some weeds will come through **under** the ground cover, the tall ones pushing up between the plant foliage. It is therefore necessary to make an occasional check on weeds despite ground cover.

TIP FROM A VISUALLY HANDICAPPED GARDENER

When planting out seedlings she put a label in the ground beside each one. This prevented her pulling them up as weeds.

METHODS IN USE FOR LAWN-MOWING

It is not difficult for a blind person to keep small stretches of lawn tidy and in good condition. In small areas it is possible to **overcome** any problems that can arise regarding orientation, for two reasons. In the first place, **small lawns** are likely to be near enough to buildings, walls, fences or hedges for these to act as sounding boards, and so give aid to a sense of direction. Secondly, there are **other** means of guidance for the operation of mowing.

Practice can lead to successful results, even by a gardener who has no sight at all. Practice does, of course, also involve perseverance, but if both are exercised there need be no doubt of final success. The methods of mowing described in this section have all stood the test of experience by totally blind gardeners. Your preference may be for any one of these rather than the others—or perhaps you may find that one of the ideas will spark off devising a method of your own. Here are four different ideas already in use:

METHOD 1

This method was devised by a totally blind gardener who was also deaf, so it could be useful to people who have difficulty in keeping a sense of direction.

Our gardener had two stretches of lawn which were both narrow, so he worked from end to end. First (with one-handed shears) he cut a strip of the grass 22 centimetres wide down each long side of the lawn. This helped to prevent the mower slipping over the **edge** of the lawn. On one of these cut sections he then pegged a strip of wood down the length of the lawn. It acted as a guide for his foot, so he was able to make a cut with his mower from end to end. Having made the first cut, he could then move the wood along to guide his foot for the second cut. He would continue in this way until mowing was finished, and he could tidy the two **ends** of the lawn with his shears.

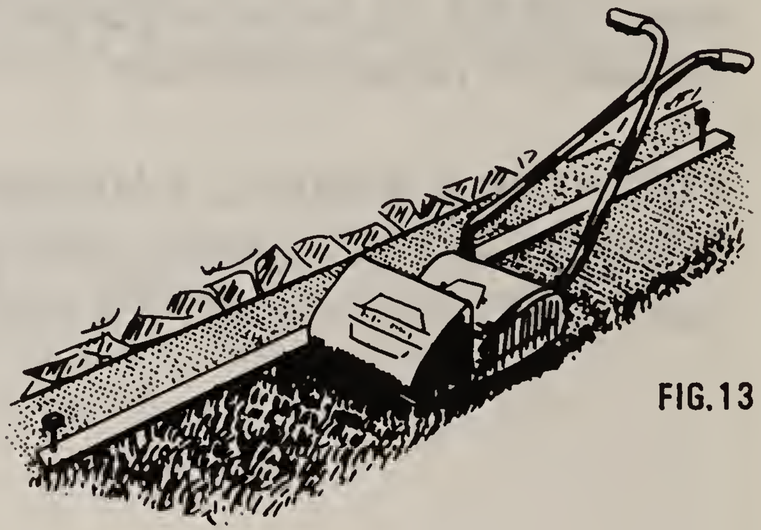


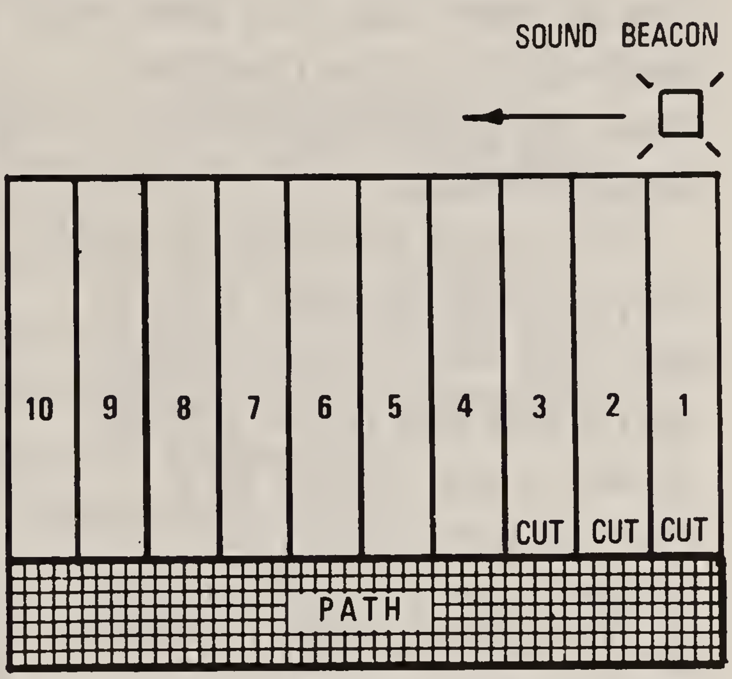
FIG.13

An alternative to this idea would be to peg plastic piping down instead of a strip of wood. If desired, short pieces could be linked by coupling joints, making storage easy and providing for multi-purpose use in other parts of the garden. If coupled also to the plastic piping right-angles we have previously described, the use of the right-angles would ensure **straightness** of the length of piping down the lawn.

METHOD 2

This is a method in quite general use. Suppose you have a stretch of lawn 3½ metres long and about 1½ metres wide, with a path flanking one of the long sides. You first mow **across** the **width** of the lawn, working your way sideways along the path. You then mow **lengthways**. This double mowing is a good check. If you left

any patches uncut when crossing the width of the lawn, you would certainly cut them when mowing lengthways.
For this method what is your guide? It is the Sound Beacon bought from the Royal National Institute for the Blind. By way of example, suppose you are facing across the width of the lawn, working your way side-ways along the path from **right** to **left**. You would place the Sound Beacon on the ground opposite where you are standing on the path. You make a cut with your mower across to the Beacon, move it about 30 cm. to the left, then pull the mower back to the path. Move the mower to the left, so that it is again opposite the Sound Beacon and make another cut across the lawn. You proceed in this manner until you have completed all the cuts across the width of the lawn.



METHOD 2

FIG.14

You might find the next stage rather difficult. That is, mowing lengthways to the Sound Beacon and pulling the mower back the entire 3½ metres before making the next cut. If too difficult, you could be **very** thorough with your mowing across the width of the lawn. An alternative for this stage, do your lengthways mowing, but devise a method of going only halfway at a time.

METHOD 3

This is exactly the same as Method 2, but without the Sound Beacon. The lady who said she "went all over the place at first" started her practice with the Sound Beacon and much later was able to discard it. The neatness of her lawn is splendid evidence of her success.

METHOD 4

This is another quite usual method of lawn-mowing. It is useful for anyone who has a fairly large lawn. Start mowing from the path and work inwards six paces. Pull the mower back six paces. Work your way sideways, as in Method 2. That is, supposing you are starting at the right-hand end of the path, you would move sideways along it to your left. Having made your first cut (six paces inwards from the path) and pulled back, you would then move sideways to the left and make a second cut of six paces in from the path.

You continue until a piece six paces wide by the edge of the path has all been cut. You then mow your next piece in the same way, starting your cuts this time from the piece you have already mown.

If you find this difficult you can provide yourself with an aid. You might have a plank you could peg down on the mown piece, to use as a starting point when you no longer have the path as your guide. An alternative could be found by joining further pieces of plastic piping to your right-angles. It is likely that before long you could discard the aids. You could use the Sound Beacon for this method also if you wished.

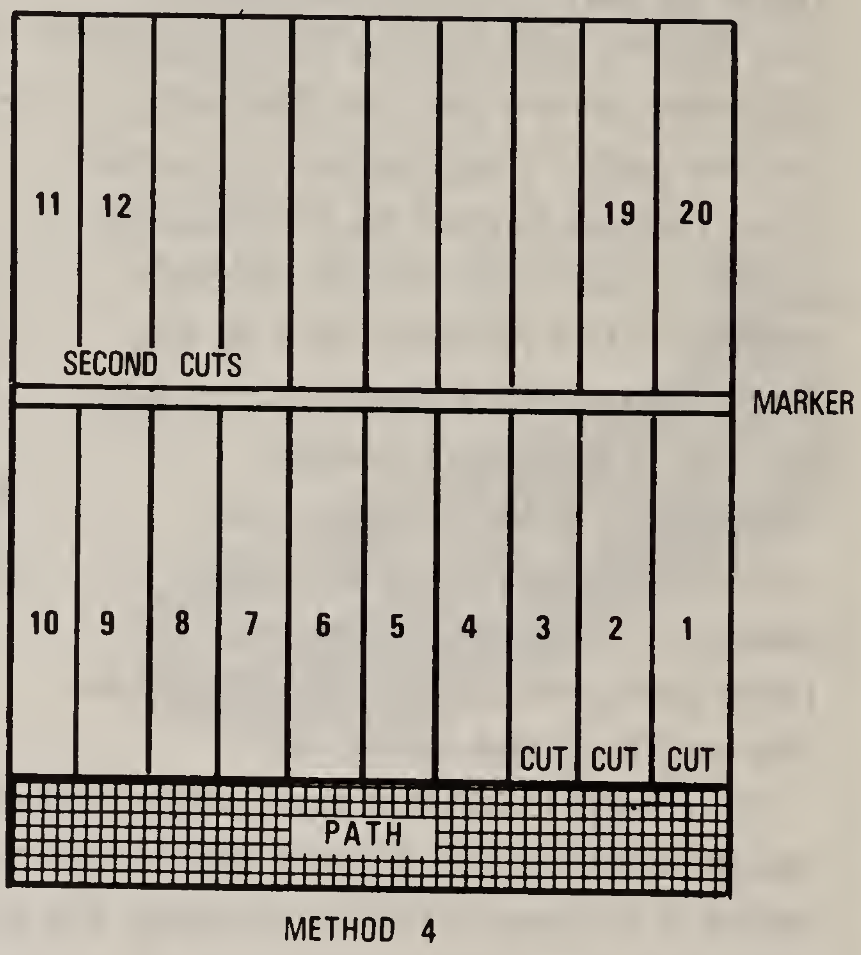


FIG. 15

SHAPE OF THE LAWN

A rectangular lawn, with straight edges and a path along one side is recommended. It is more than likely that flower beds will border some of the sides, so if it is possible to edge these with crazy paving this could have many advantages. Try to avoid island beds in the lawn if possible.

EMPTYING THE GRASS BOX

If you have no sight, hang the Sound Beason on the handle of the mower when you empty the grass box. You can then return to the mower easily.

VERY LARGE LAWNS

If a very large lawn cannot be divided in any way, a totally blind gardener would be well advised to seek sighted help for mowing.

CHOOSING A MOWER

A hand mower Without doubt this is the easiest type of machine for a blind person to use. If buying one, check that the height of the blades can be adjusted without difficulty.

An electric mower More blind gardeners are using electric mowers than in the past. The type controlled by one hand is the best, leaving the other hand free to hold the cable well away from the machine. When purchasing, look for the following:

1. well guarded blades, at whatever height they are set,
2. good insulation everywhere
3. automatic stop to power when the operator ceases to grip the driving gear.

When mowing with an electric machine, Method 4 is the best (the operator taking six paces forward, six back, and so on). With this method it is easier to keep the cable well away to one side, clear of the machine and the operator's feet. The cable should always be on the side nearest the socket in which it is plugged. On no account should an electric mower be pushed forward and turned round to make another cut on returning to base. This would most certainly be likely to cause entanglement with the cable.

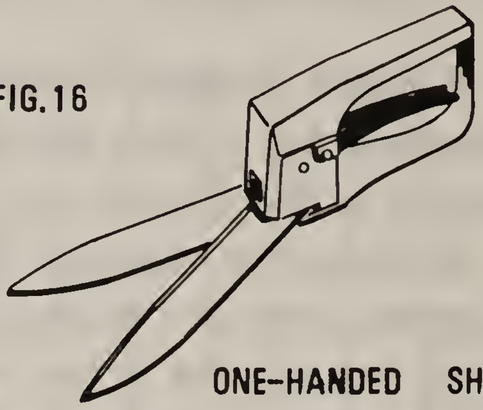
Other types of mowers Although the writer knows some visually handicapped people who use other mowers, none of these can be recommended generally. A battery-powered machine is heavy, if weight is required, but it is expensive to run. A petrol-driven mower should never be used by anyone with a visual handicap, as it is so noisy that a sense of direction can be completely lost. There is also some danger attached to its use (a risk which applies equally to the more powerful types of electric mowers).

As recommended earlier, any blind gardener with a very difficult lawn, either because of its large size, its long grass or its excessive roughness and bumps, would be well advised to seek help from someone who could do the mowing with a suitable machine.

LAWN EDGES

All the blind gardeners known to the writer get down on their knees and cut the edges of lawns with hand shears. Many use the one handed type already mentioned. Operated with one hand, these shears leave the other hand free to feel the grass. If buying a pair of one-handed shears, decide whether you want them with a plate under the handle. This plate will help to keep the blades level with the ground. If you have one-handed shears without the plate you will need to be sure that you keep the blades pointing downwards while working. If not they can tip upwards and catch your fingers. The writer can, however, vouch for totally blind gardeners using the latter type of shears carefully and never having an accident.

FIG.16



ONE-HANDED SHEARS

STRAIGHTENING LAWN EDGES

It is quite possible to carry out this operation with an ordinary, long-handled, half-moon edging tool. If a plank, or a strip of wood, is pegged down as a guide, you can straighten lawn edges on your feet instead of on your knees. Make sure first that the guide is itself laid straight by bringing your handy right-angles into action.

Neat work. A deep channel surrounding the lawn gives considerable help to the work of keeping edges tidy. One totally blind gardener who kept perfect lawn edges used to bang them after straightening, using an old-fashioned tool something like a heavy mallet.

FLOWER BORDERS ROUND THE LAWN

Overhanging foliage from these borders can cause problems. The best plan is to think ahead when planting. Simple rules are:

1. Along the stretch of border against the lawn always have very low-growing plants that can be kept under easy control.
2. Plant well away from the lawn edge.

An ideal plan is to have crazy paving between the lawn and the flower border. If level with the grass it will assist mowing and trimming. There will also be a two-fold bonus. The problem of overhanging foliage will have been solved and there will also be a dry path from which to work.

LAWN CARE

For satisfactory results, a visually handicapped gardener needs to carry out all lawn care operations within a series of measured areas. This is simpler than it may appear if your right-angles are used.

FEEDING, SPREADING LOAM, ADDITIONAL SEED SOWING, ETC.

For operations such as these, all gardeners, whether blind or sighted, have to work within measured areas. Granular lawn-food, for example, is usually given at 60 grammes per square metre. You can easily measure half a square metre by taking your two plastic piping right-angles and using a straight coupling joint to link one arm of each together. Then weigh out 30 grammes of lawn food. Find a

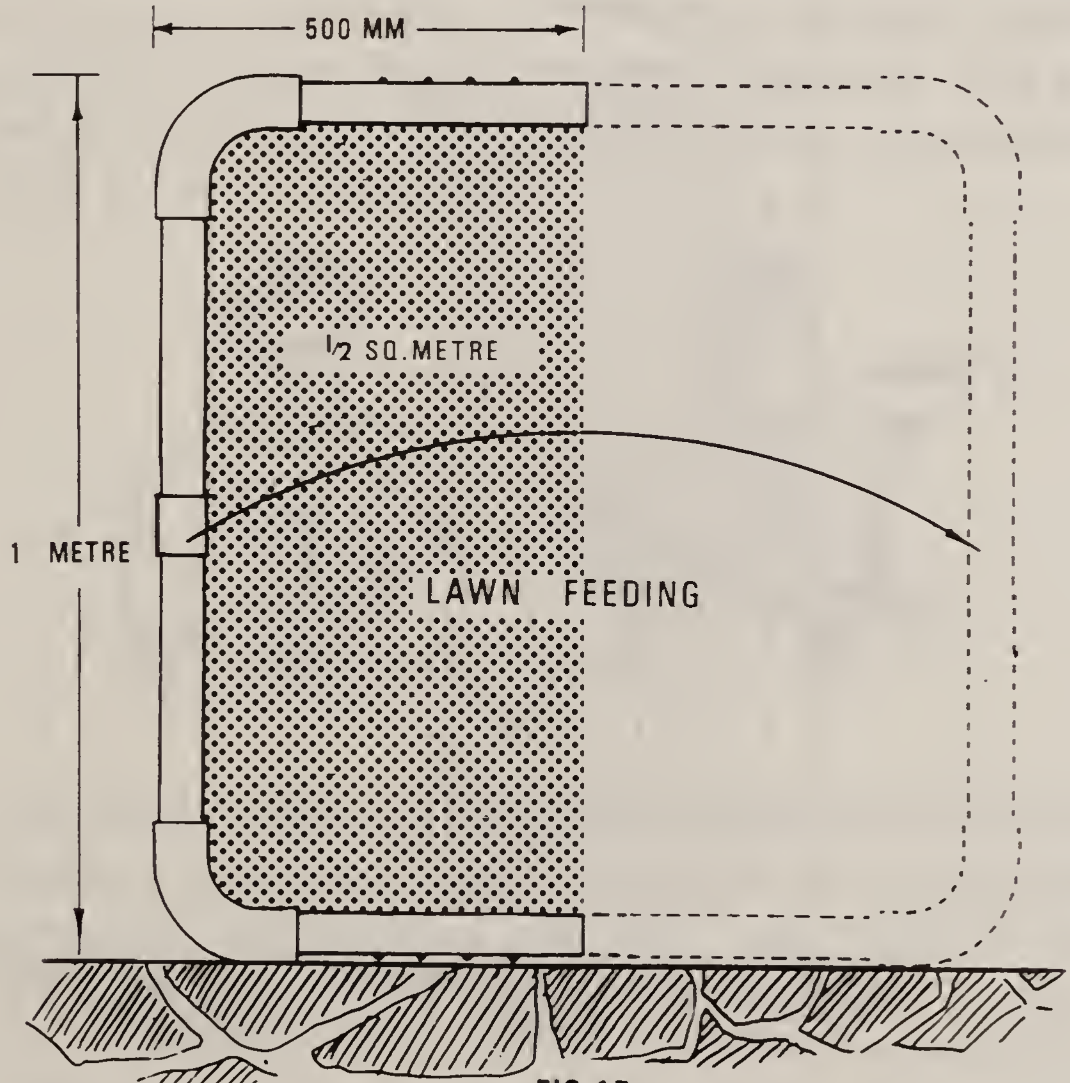


FIG. 17

small container—such as an egg cup—to hold that quantity of granules and there will be no need to continue weighing them.

When you have scattered the granules evenly over half a square metre between your two right-angles, turn them over. You now have a second area of half a square metre measured. Fill your egg cup with granules and repeat the scattering process over that area. Continue like this until the entire operation is finished.

RAKING AND SPIKING

A similar method can be used for raking and spiking. You cannot comfortably do this work within the area of half a square metre, so you will need to extend the distance between the two right-angles. Join another piece of piping with couplers between the two—the extension can be whatever length you like. You then have a guide for your foot when raking or spiking. When you have finished work on the first strip of lawn between the two ends of your guide, turn the guide over. Work on the next strip, turn it over again, and continue in this way until finished. Be sure to peg the guide down. This is important.

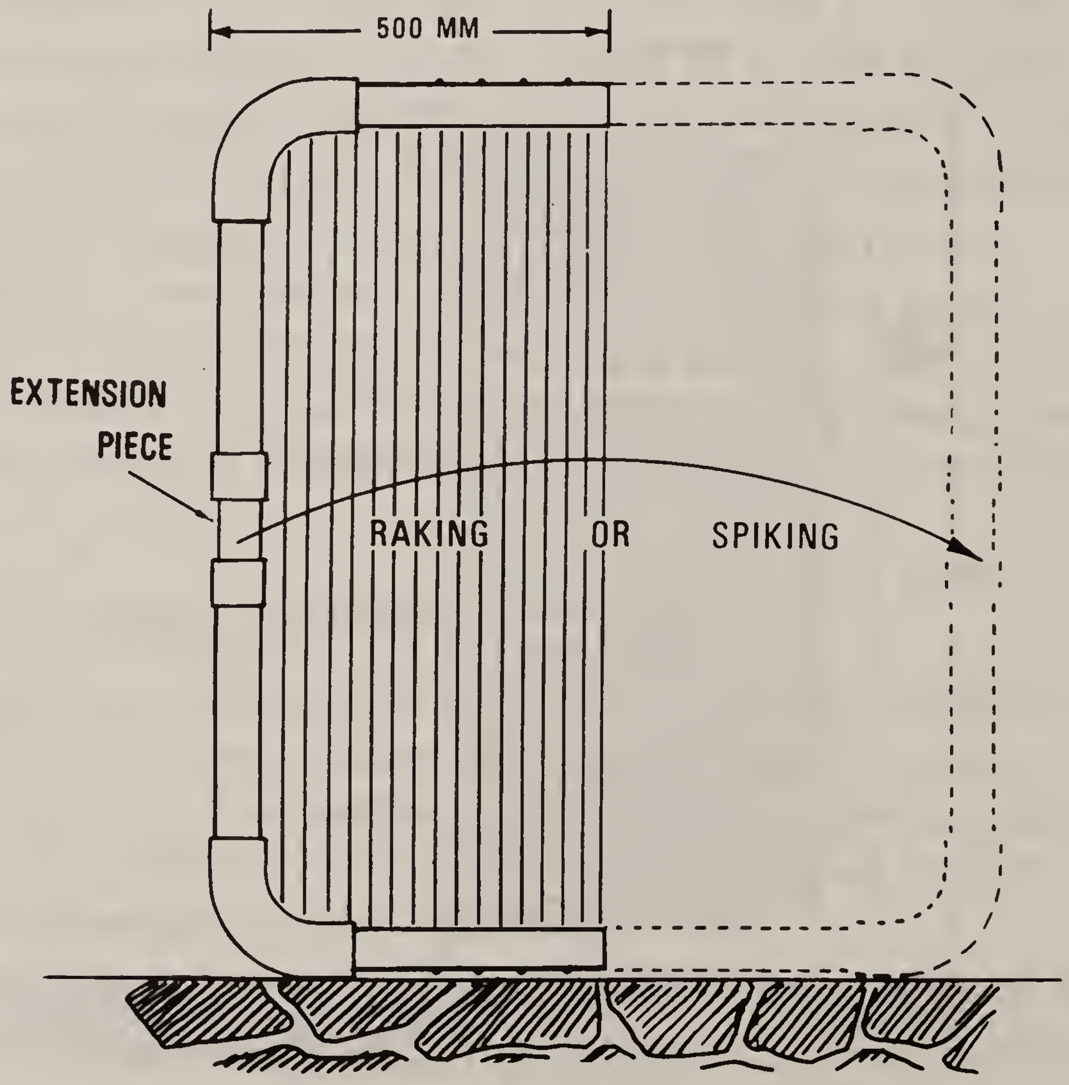


FIG. 18

PLANTS IN POTS

Here, at last, is a Section of special interest to plant-lovers who have no garden and to people who can no longer work out of doors. Anyone who enjoys growing plants can be called a gardener at heart, and no one need give up the pleasure of indoor occupations, such as potting rooted cuttings and potting on. Two little hints may therefore be useful.

1. FINDING THE MIDDLE OF A 90 MILLIMETRE POT

Some people may say this is not important. There is, however, great satisfaction in being congratulated by sighted friends for having all the little plants in the middle of their pots.

For a rooted cutting you will, of course, be using a 90 mm. pot. Try finding the middle by the following method, which requires no other equipment than your own two hands. Stand the pot on the table and put both hands round it. The tips of the thumbs must touch each other and your fingers will overlap. Lift both thumbs, tips still touching, and rest them on the rim of the pot. The tips of your thumbs will reach exactly to the middle. You now have the central position for your little plant.

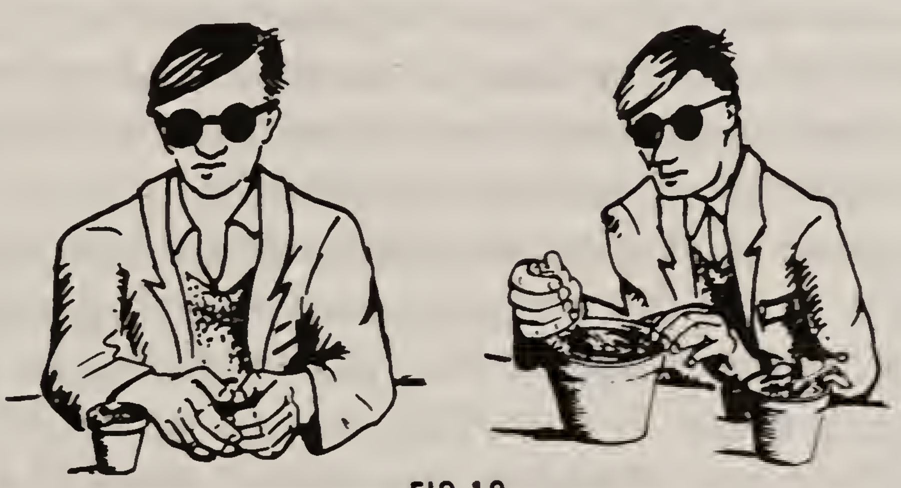


FIG.19

Remove one hand to pick up the plant, but be careful **not** to move the thumb of the other hand. You can then put the plant between thumb and first finger of that hand, and hold it in position while you fill the pot with compost, using the other hand. Practise this with a stick instead of a plant until you have mastered the technique, which you will find surprisingly easy.

2. POTTING ON TO A LARGER POT

There is another technique for finding the middle of the pot when the time comes to move your plant into a larger pot. This technique is used in the commercial world. Put a layer of compost in the bottom of the large pot and stand a smaller pot on the compost, checking that it is in the middle. (The smaller pot must be the same size as the one in which your plant is at present growing.) The rim of the small pot must stand slightly higher than the rim of the larger one. Fill between pots with compost. Lightly press the compost down in the large pot, taking care not to compact it. Now lift the small pot out of the middle, where it will leave a neat hole, into which you can drop your plant, complete with its ball of soil.

Whenever you are potting plants in the living room or kitchen, always spread a polythene sheet over the table, so that no one can complain about untidiness or damp.

SOME INDOOR WORK: SOWING SEED AND INSERTING CUTTINGS

Seed sowing in trays, and inserting cuttings, are two operations in which everyone can take part. If, for any reason, you are quite unable to do outdoor gardening, there still remains for you the interest of indoor work. If you can equip yourself with polypropylene trays you can start with confidence, as they will not break in your hands as do trays made from some other plastics. The initial expense is a little higher, but it is worth while.

Having obtained trays that are safe to handle, the next consideration is finding a method of seed sowing that can be managed easily without sight and at the same time be satisfactory from a gardening angle. It must obviously be a method which eliminates pricking out, therefore the answer must be **spacing the seed** by some means.

There are various alternatives:

1. Using peat pots (now expensive and cannot be used more than once).
2. Using tiny, square polypropylene pots, twenty-four of which fit in the tray of the same material.
3. Using a kit which consists of slabs of expanded polystyrene

with forty holes, a reservoir, a capillary mat and a tool for pushing seedlings (complete with ball of soil) out of the unit. These are excellent, although they can break and so require careful handling. You will not cause any injury to the hands. Perhaps in the future we may find that manufacturers have developed a unit that is equally effective but more durable.

4 Using a home-made device. We have two suggestions that will be described later.

From time to time there are bound to be various seed sowing aids coming on the market, some of which might help a visually handicapped gardener. If anyone recommends one of these we are sure you will be wise enough not to purchase it until you have had an opportunity of making your own thorough experiment with it.

Your home-made equipment may be the right answer, so here are details of the two ideas we mentioned.

MAKE YOUR OWN SEED SPACER

One idea is to make a template that slips easily inside the top of your seed tray, resting on the surface of the compost. Forty holes of 25 mm. diameter are drilled in this template, and a bar across the middle acts like a handle to lift it away. Be careful to make it of material that will not warp, and if the material has a smooth and a rough side, the smooth side should be next to the compost.

One seed is sown in the middle of each hole. The size of the holes is important. A diameter of 25 mm. gives you comfortable room for your finger-tips when sowing the seed. It also provides exactly the right spacing between the seedlings as they grow. You can find them easily without damaging the tender stalks.

Another advantage of this template (Fig. 20) is that you can avoid the difficulty of using a sieve to scatter the light covering of your seeds. You can sprinkle it from your fingers over the holes, then gently lift the template away and lightly tap the tray to settle it!

Having stated advantages of the template, we must not overlook a **disadvantage.** It cannot be used for cuttings as well as seeds. The cuttings could be dragged out when the template is lifted away.

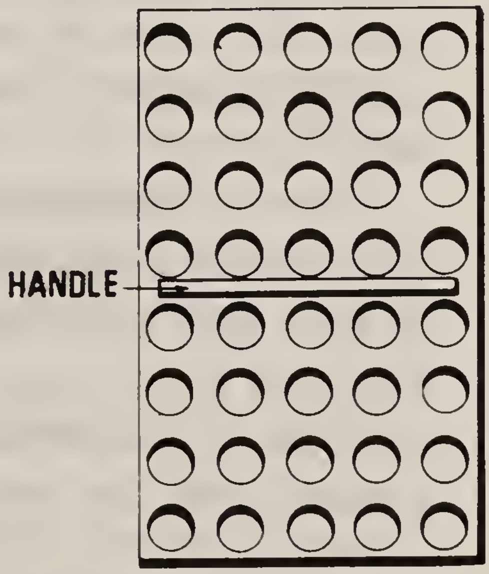


FIG.20

A DIFFERENT TYPE OF HOME-MADE GUIDE

This can prove an aid both for seed sowing and for inserting cuttings as well. It is a wooden surround for your seed tray, standing up like a wall outside it (Fig. 21).

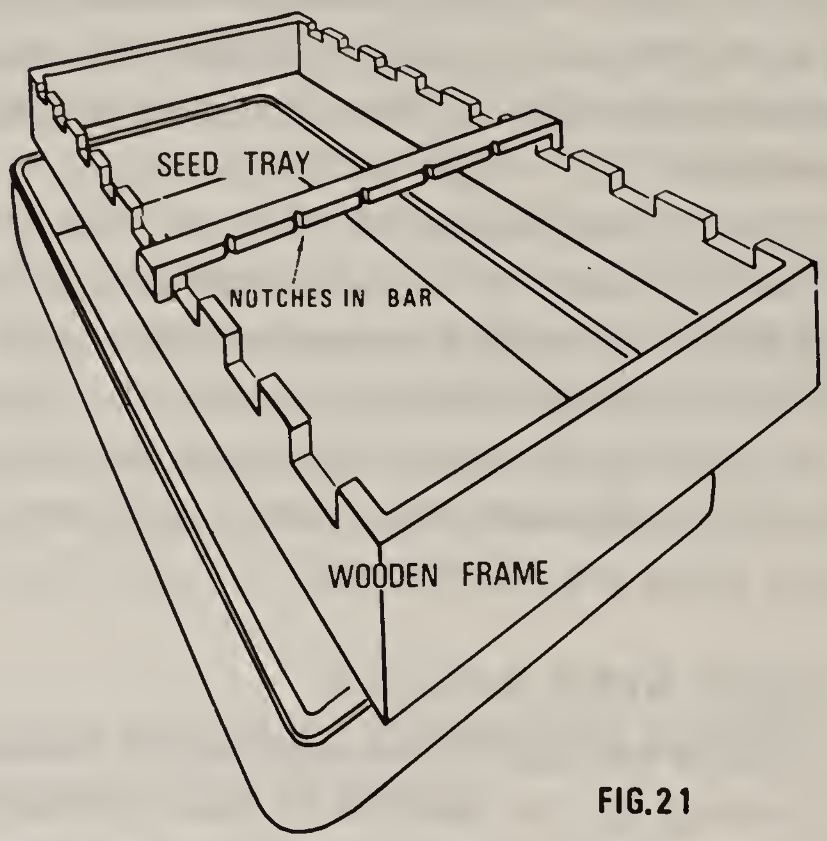


FIG. 21

This surround must fit close enough to the tray to avoid wide gaps, but at the same time it must not be so close that removal is difficult. Cut eight square notches down each of its long sides. These are to take a square bar that will stretch across your tray and be moved from notch to notch.

Five notches will be made along the bar at regular intervals. These will give you five places across your tray for dropping a seed or inserting a cutting. Then, by moving the bar along the eight notches down the sides of your surround, you will have eight rows of five separate places. Thus you can fill your tray with either forty seeds or forty cuttings.

The bar should not be too thick, and it should have a stop at each end to hold it steadily in place while you are using it. You must also be sure that it fits neatly into the notches on the surround. The surround itself must be a little higher than the rim of the tray, with the base of the notches level with the rim. The bar will then fit properly into the notches.

HANDLING SEEDS

We have advocated spacing our seeds in the tray in order to avoid pricking out. We have suggested various aids for space sowing—but what about handling the seeds themselves? Some can be felt easily because they are large but how can we cope with the tiny ones?

PELLETTED SEED

Opinions differ about pelletted seed. Some people regard it as expensive. On the other hand, it makes possible the handling of single tiny seeds, so for a blind gardener it is a practical solution to a very real problem. The value of pelletted seed, like everything else, is a matter in which each gardener makes an individual decision after fair experiment. Two conditions need to be observed. One of these is that pelletted seed requires damp compost for successful germination—and the second point to remember is that the seed inside the coat is tiny, so it **must not** be sown too deeply.

WRAPPED SEED

This is a "do-it-yourself" idea. We understand it goes back to hard times earlier in this century. At that time, it was intended to prevent wastage of seed that was very fine. A small amount of seed was spread on a flat surface (such as a plate). Using the pad of a forefinger, one seed could then be picked up and rubbed on a tiny scrap of paper. The paper was screwed to make a little pellet—and so the pellets could be sown at stations either in trays or out of doors.

This is undoubtedly an indoor job for a wet day. It would appear fiddly for a blind person to manage, but experience has proved that it can be done. Perhaps the pad of the finger may pick up two or three seeds instead of one, with the result that groups of two or three seedlings will spring up. However, these are more easily thinned out than seedlings along a whole row.

Experiments with blind people have revealed a number of points to note:

1. Wrapping of fine seed is of greater advantage for outdoor seed sowing at stations along rows than for the spacing of seed in

trays. The practical reasoning is that, if a fine seed can be picked up by the finger, it might just as well be dropped immediately into a space in the tray without spending time to wrap it. Wrapping is useful for outdoor sowing of very fine seed because tiny seed could not otherwise be sown at stations.

2 The best germination comes from seed wrapped in single-layer soft toilet paper. This is rather difficult to feel, because the piece used for wrapping must be very small (no larger than the pad of one's finger). Here is a tip. Tear each piece off as required, using the edge of a plate to assist tearing. You then have the piece firmly between finger and thumb and will not lose it. Seed in this very thin paper is best rolled into a little ball between finger and thumb.

3 As an alternative to single-layer soft toilet paper, liquorice and thin cigarette papers have been tried. The pieces must be cut in half. This could be handled better by people whose touch was not particularly sensitive. A home-made gadget to push the paper into a little depression helped. The paper could then be gathered up like a tiny packet of salt, and twisted. These packets, used for outdoor sowing, had to be laid on their sides to dissolve quickly enough. Germination was generally inclined to be slow.

4 It was necessary to remember that care must be taken not to sow the wrapped seed too deeply.

PREPARING THE VEGETABLE PLOT

GUIDE FOR DIGGING, FORKING AND RAKING

It is helpful to have a piece of equipment to guide these operations, otherwise you may work at varying angles and so miss patches of your plot. A simple guide consists of two right-angles made from wood, joined by a connecting bar. The arms of the right-angles should each measure 500 millimetres, but the connecting bar can be any length desired. Slip-in joints will couple the bar to the right-angles, and holes are drilled through the wood for pegs to anchor the guide on the ground.

This equipment will mark off a rectangular section of your plot. The section measuring 500 mm. wide and length according to your choice. The right-angles and connecting bar coupled together will make a boundary on three sides of the section, with the fourth side open.

Using the guide

To use your guide correctly, your plot **must** have one straight edge, this edge will give you a straight line as a **home base.** Peg the right-angles at one end of your guide **flush** with this base line and your **guide** will then be straight. This will enable you to dig, fork and rake across the plot knowing with confidence that you are keeping the work straight and not missing patches of ground. You will proceed with the work section by section, either moving the guide along or turning it over to start each new section when the previous one is finished. For digging, your spade will be **outside** the guide, but you will work **inside** it for forking and raking. Later, you can also use the guide to ensure that rows for planting are straight.

Digging For this operation, peg the guide near one end of your plot, but far enough away from it to allow room for the width of a trench. The arms of your right-angles will be pointing **away** from this end, so you will actually dig the trench **outside** the guide. When the first trench across your plot is finished, withdraw the pegs from your guide, move it back the width of a second trench, peg it again, and dig the trench. That one finished, move the guide again and dig the third trench. Continue like this until all the digging is completed.

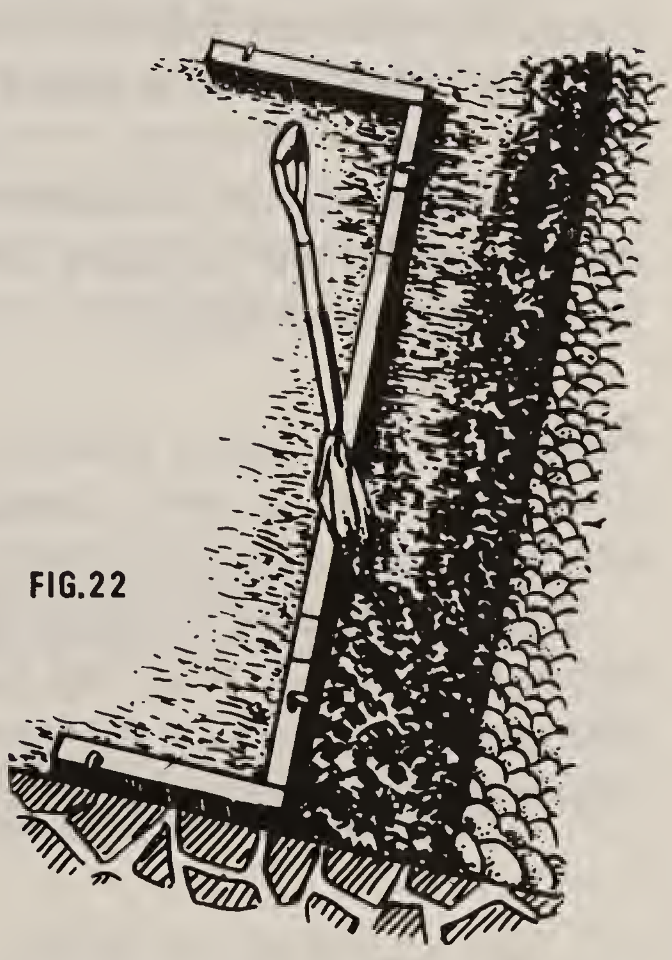


FIG.22

Forking and Raking Unlike digging, these two operations are carried out **inside** your guide. Peg it firmly as before, but this time its starting position will be **close** against the end of your plot. The connecting bar will be against the end, with the arms of the right-angles pointing down the plot. You then have a strip 500 mm. wide across your plot, in which to start forking or raking.

Walk from the base line to the opposite end of your guide and fork from that end back to the base line. The connecting bar of your guide will aid direction. With one strip now forked over, take out the pegs and turn the guide completely over so that the arms of the right-angles are pointing **up** the plot instead of down. Peg the guide in position and fork the second strip. This done, you again turn the guide right over and peg it ready to work on the third strip. Continue in this manner to the end of the plot.

The process for raking is the same, except for the fact that each strip must be raked from end A to end B, then back from B to A.

You will find that the width of a domestic rake will fit nicely within the boundary of your guide.

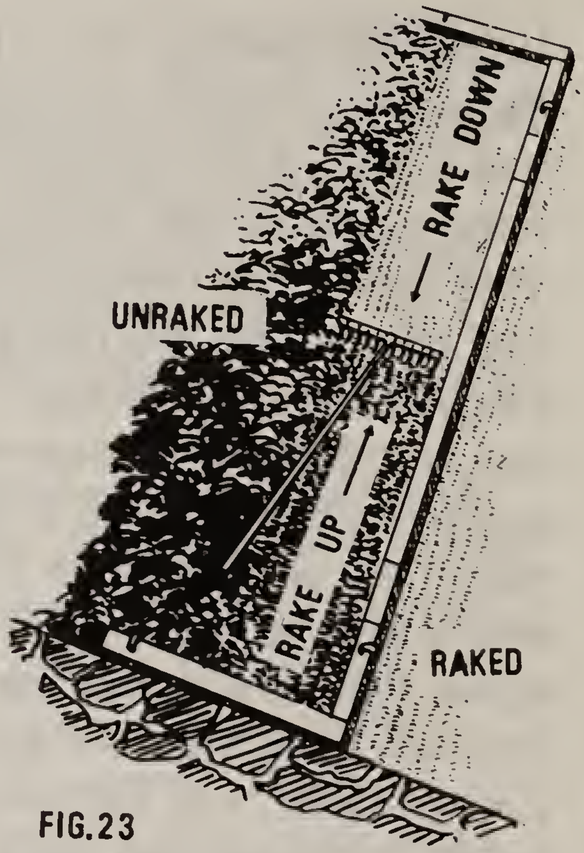


FIG.23

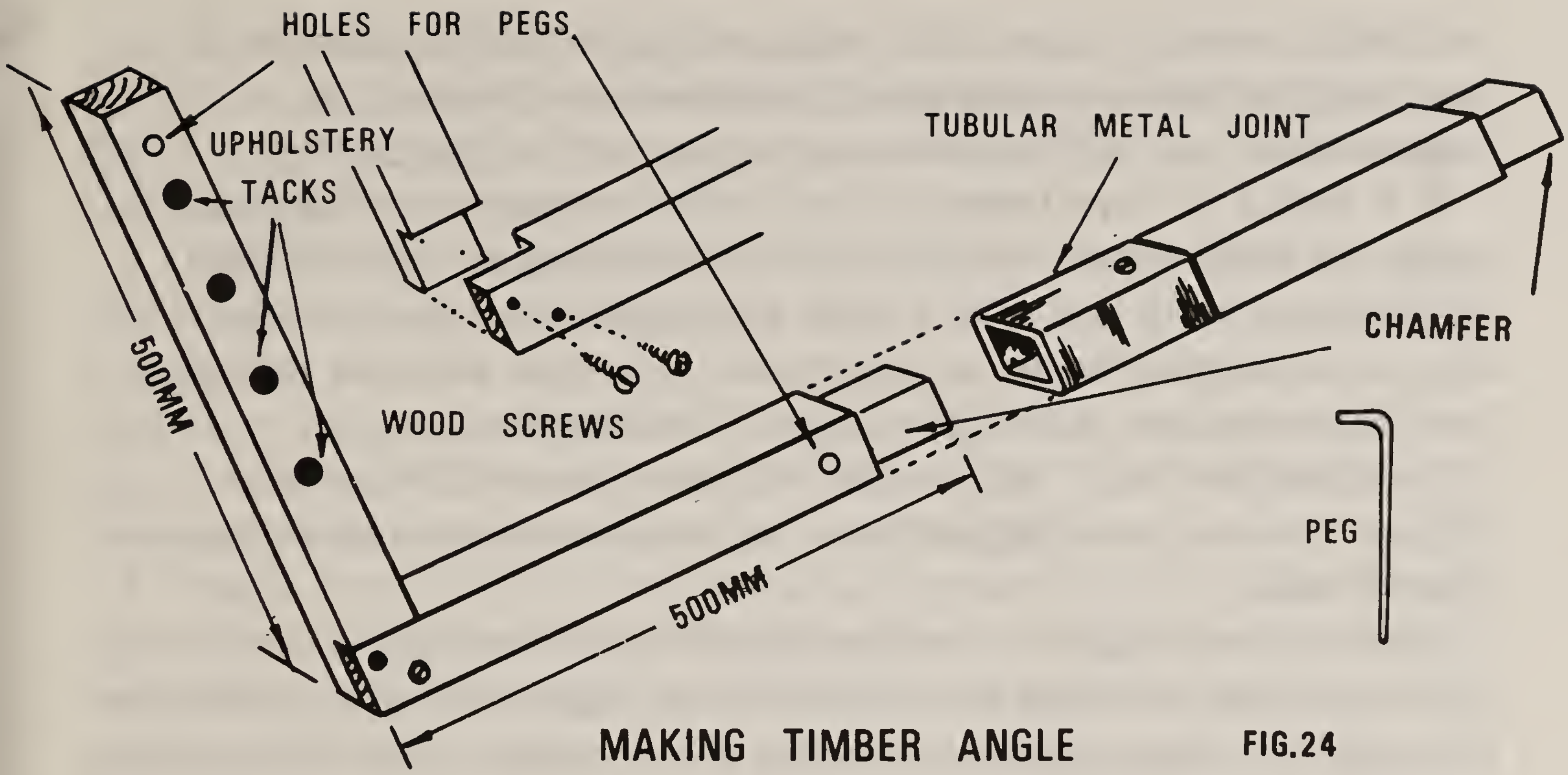
Alternatives

You may prefer to use a plank as a digging aid, but your right-angles are still helpful for setting the plank straight.

Another preference might be a guide made from plastic piping rather than wood. If so, the piping would need to be a size larger in diameter than the 22 millimetre piping recommended for use in the flower garden. Being light-weight it will need firm pegging.

MAKING A GARDENING GUIDE FROM WOOD

The size of timber suggested is 38 × 38 millimetres after planing. (Please note that, at the time of writing, sizes of timber are still being sold under Imperial measurements. It is therefore not possible at this stage to quote sizes in exact metric terms. There is no problem regarding **lengths** of timber, as metric measurements already apply in this respect.)



MAKING TIMBER ANGLE FIG.24

To make the gardening guide you will need two metres of timber for the right-angles. This can then be cut into four half-metre lengths. (You will recall that this is the same measurement previously recommended for right-angles made from rigid plastic piping). For the connecting bar between the right-angles, the length of timber required will be a matter of your own choice.

The other requirements will be:

1 Round-headed upholstery studs to provide marks on your guide for measuring distances on your plot.

2 A pair of tubular square joints for coupling the connecting bar to the right-angles (source of supply given in Appendix at end of booklet).

3 Green Cuprinol or other substance to treat the wood for outdoor use. (Brown Cuprinol or any product containing creosote must be avoided).

4 Possibly two strong shelf brackets. These are optional if the right-angles are constructed with half-joints, but necessary if a less professional method is used.

5 Pegs to hold the guide in position.

General outline of construction

The two right-angles are made from the four half-metre lengths of timber already mentioned. If you are a handy carpenter you will naturally construct them by making half-joints at the corners. If you are unskilled, there is a simpler, unprofessional method of construction that will be described at the end of this Section.

It is useful to have measurement studs on one arm of each right-angle, to assist when marking rows for planting vegetables. For whatever purpose the right-angles are used, it is essential they should be pegged firmly to the ground, so holes must be drilled at both open ends of each right-angle. Finally, when coupled to a connecting bar, each right-angle will have the end of one arm slipped into a square tubular joint, so these ends will need to be chamfered.

The connecting bar must be chamfered at both ends, and the coupling joints screwed to it at each end. (Appendix gives reference for supply of these joints.) After this the complete gardening guide should be treated for outdoor use.

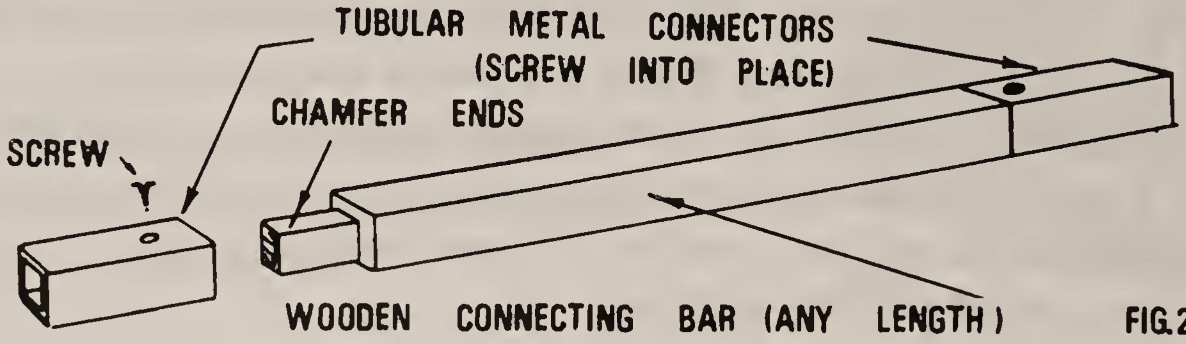


FIG.25

SOME CONSTRUCTION DETAILS

1. The right-angles One arm of each right-angle should be marked with studs on both sides, thus providing equipment that can be turned over and also used for many different purposes (such as measuring distances between rows of vegetables). It is suggested that the studs are placed at intervals the same as recommended for plastic piping. The equipment could then be used anywhere in the garden, although some of the stud markings would not be needed on the vegetable plot. Working from the outside corner of the right-angle, stud marking could then be found at 200, 275, 350 and 425 millimetres, with the end of the arm giving 500 mm. Like the plastic piping right-angles, one arm of each will be marked with studs and the other arm will be plain. The end of each plain arm must be chamfered to slip into the coupling joints fitted on the ends of the connecting bar. A hole should be drilled at some reasonable spot on each arm to take a peg.

2. Strengthening the right-angles Although optional, it could be a wise precaution to screw shelf brackets on the inside corners of the two right-angles, as the half-joints of the timber can be damaged and weakened by a garden fork.

3. Making the connecting bar Both ends of this bar must be chamfered so that a coupling joint can be fixed firmly at each end. It is important that the fixture is really firm. As these joints are not stainless steel it is advisable to treat them against rust. A hole for a peg should be drilled near each end of the bar. Stud markings for measurement are not necessary, unless the gardener wishes.

4. Pegs Pegs similar to those recommended for the plastic piping right-angles will be suitable, the only difference being that for heavy work on the vegetable plot they must be longer. They should be **no less** than 250 mm., so that your gardening guide can be held firmly to the ground. Metal is the best material to use.

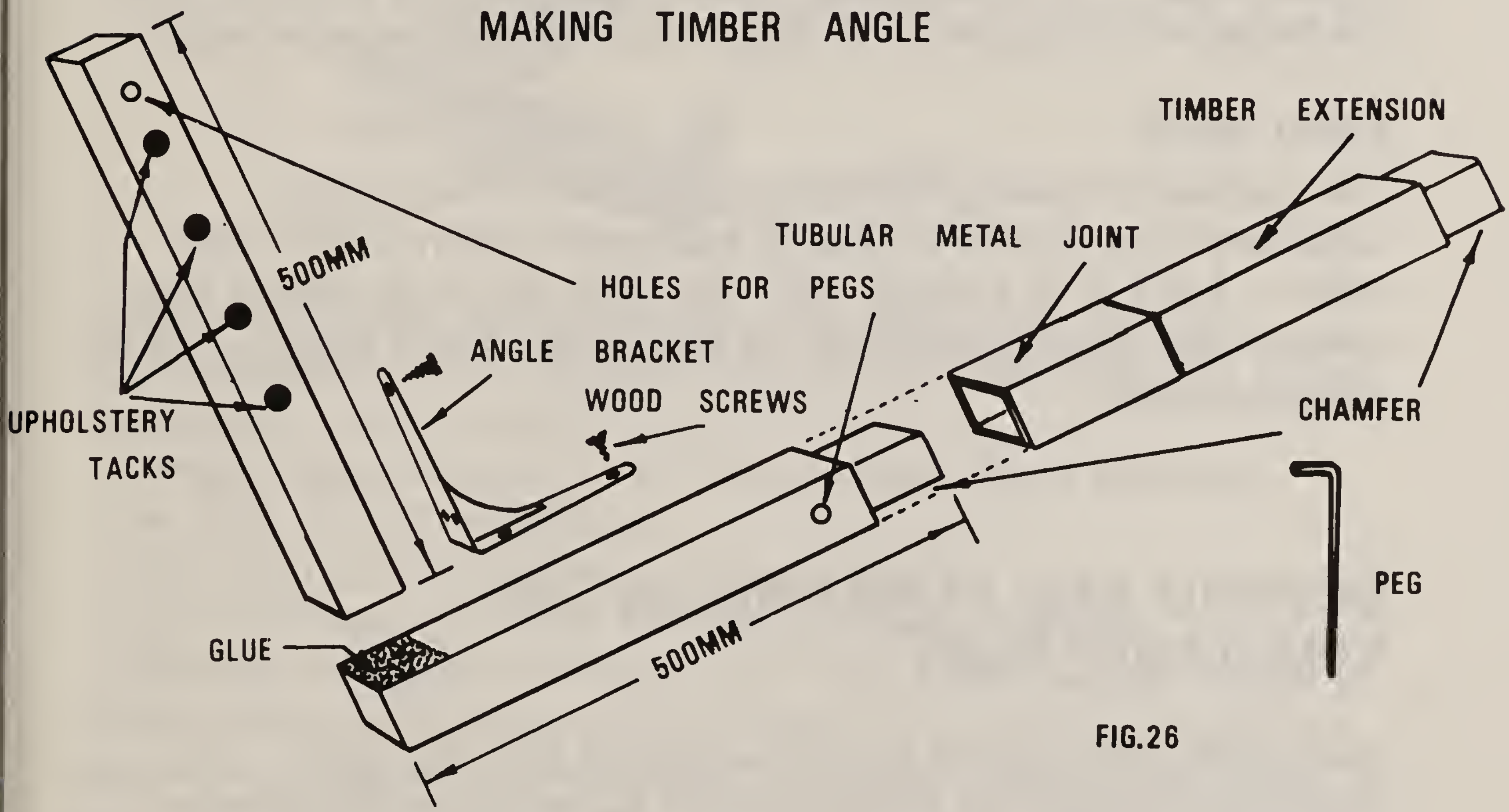


FIG.26

ALTERNATIVE METHOD FOR CONSTRUCTING RIGHT-ANGLES

This suggestion may help anyone unskilled in carpentry. It is a simple method of fixing the corners of the two right-angles without having to make half-joints. Although unprofessional, it is more durable and accurate than a half-joint badly made.

First, be sure that all the ends of the four pieces of timber for your right-angles have been sawn perfectly square and are smooth. Provide yourself with a small container or tube of **very** strong wood glue. Take one piece of wood and glue its **end** to the **side** at the end of a second piece. This must be done carefully, so that the result is like the shape of a printed capital letter L. Leave the glue to dry.

You will now need two shelf brackets. They must be the strong type of bracket used for heavy shelves, and no less than 250 millimetres. Screw one of the brackets on the **inside** corner of the right-angle you have fixed with glue—and the job is done. The second right-angle is then constructed in the same way.

By this method you will, of course, have a right-angle with two arms of different lengths. If you leave them like this be careful to put the measurement studs on the shorter arm and chamfer the end of the longer one. Alternatively, you can saw a piece off the end of the longer arm if you wish, so that both arms are the same length.

FINAL NOTE

The purpose of making the right-angles and connecting bar separately is to provide a piece of equipment which can be used either in parts or as a whole unit. The parts can all be used in many different gardening operations, the right-angles alone being an aid of particular value.

SOWING AND PLANTING ON THE VEGETABLE PLOT

Having prepared the soil on your vegetable plot, the next consideration is to find some means of being certain that sowing and planting will be in **straight rows**, the **right distance** apart. Before going into detail about this, however, there are suggestions we can put forward regarding the size of the plot itself. These are:

1. As an alternative to long rows of vegetables we are now recommending rows no longer than two metres. This seems to be a length that simplifies orientation for a blind gardener, and eases the use of home-made aids.

2. Another alternative to planting vegetables in long rows is to change the plan of your vegetable garden completely, and cultivate in squares. With this plan all your plants are easily accessible. It requires study, as it lends itself to close cropping, a method particularly suitable for certain vegetables, (such as leeks). Thought must also be given to the size you will make your squares, in order to use them to the best advantage. Your plan must, of course, include small paths on all sides of the squares. This idea may fit into your garden plan very well.

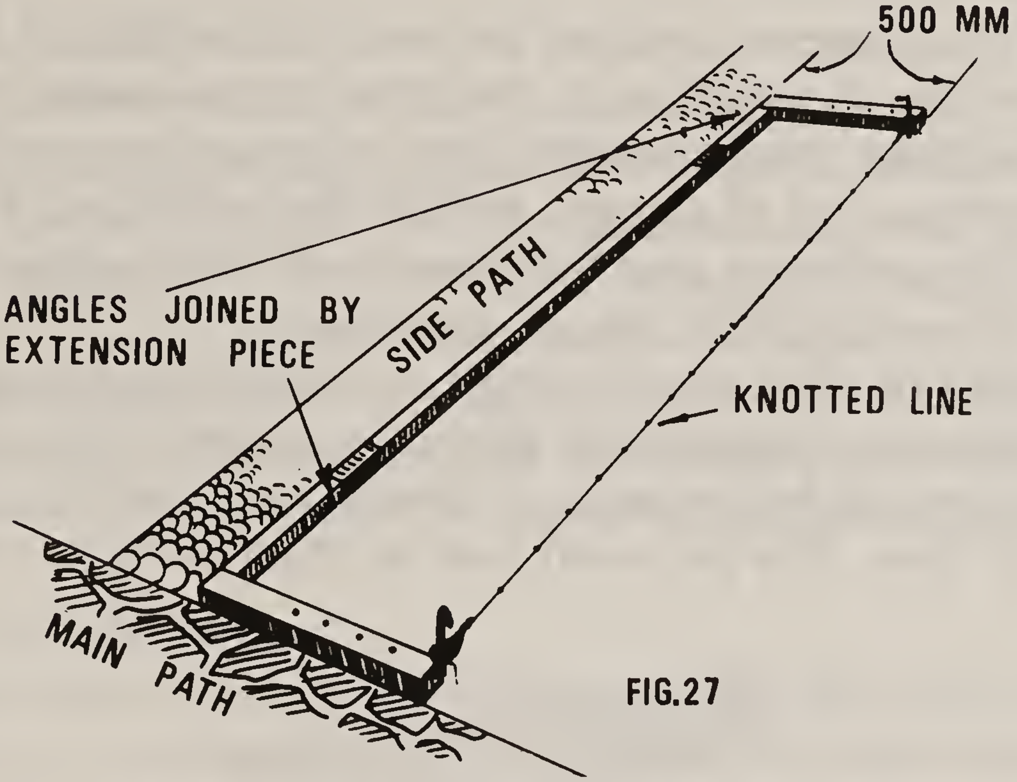


FIG.27

These suggestions give us a choice between three methods:

(a) long rows of vegetables;

(b) rows no more than two metres in length;

(c) cultivation in squares, the size of squares optional.

Whichever method is adopted, your right-angles will be needed to ensure accuracy in marking out the rows. You may have made the gardening guide we recommended for digging, forking and raking. If so, this is ideal for getting your first planting row straight. Once that row is accurately placed, you can measure the distances for the other rows from it.

Peg one right-angle of your gardening guide flush with the straight edge of your plot. You can then take a garden line direct from it across to the right-angle at the opposite end of your guide—and feel confident that it will be straight. You have studs on the arms of your right-angles at 200, 275, 350 and 425 millimetres.

These will give you four alternative distances from the end of your plot to set the line as required. The ends of the arms at 500 millimetres provide a measurement for a wider distance. If you leave pegs in the ground at the two ends of your first row you can work from these to mark the other rows.

ALTERNATIVE METHOD

A visually handicapped gardener devised another type of guide which is worthy of record as an alternative to the gardening guide already described. Used correctly, this equipment also will serve for the preparatory work of digging, forking and raking and for planting in rows. This gardener's plot happened to be two metres wide, so he made his equipment to that measurement.

It consisted of a bar of strong timber, substantial enough to be a digging guide, and marked with studs for planting distances along rows. Each end of the bar had a V-shaped notch to slip over pegs at the ends of rows. The bar could then be lifted easily from row to row.

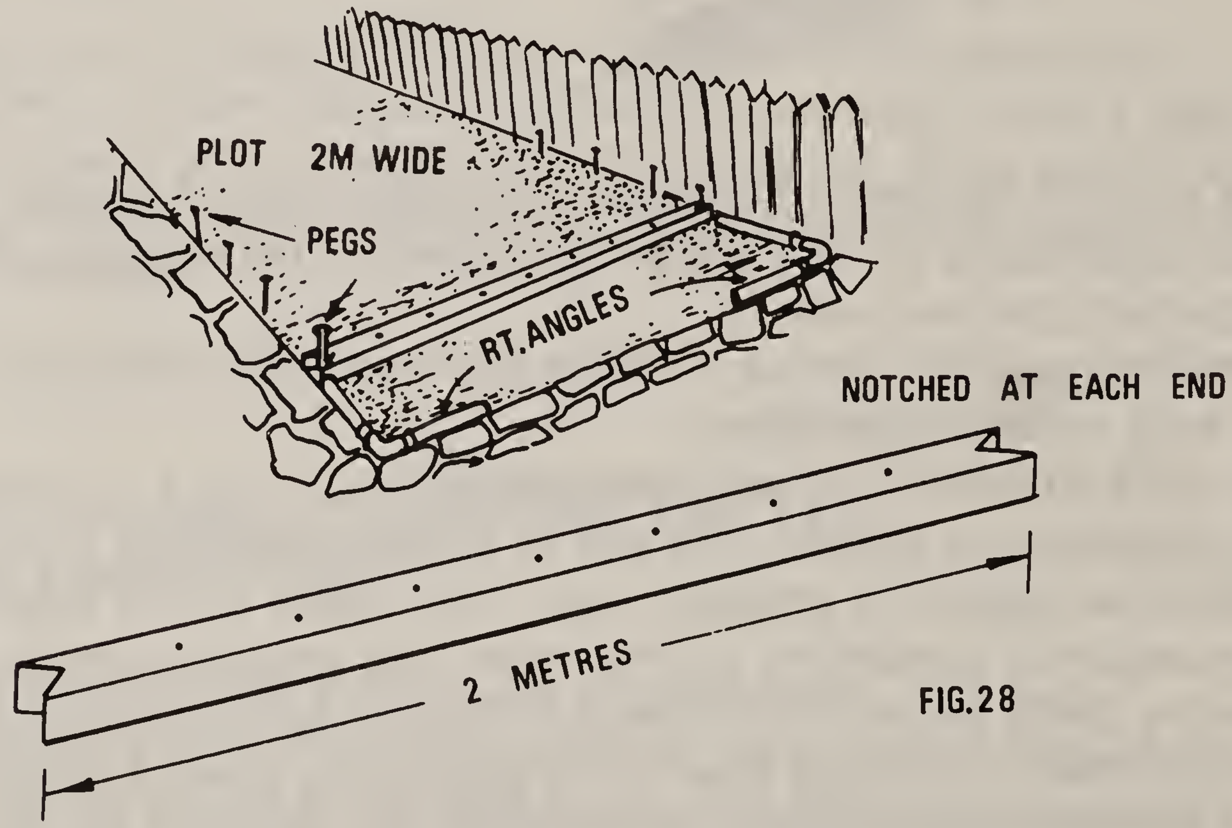


FIG. 28

To use this bar accurately, it would still be necessary to have a pair of right-angles, in order to be certain that the bar was placed square. Those made from plastic piping for use in the flower garden would be suitable. They would, however, need to be connected by an extra piece of piping, on the same principle as the connecting bar of the gardening guide made from wood. Coupling joints are available. This connection between the two right-angles is essential, otherwise there is no guarantee that the second one can be pegged accurately. One gardener made the mistake of measuring from his greenhouse at one end of his plot and a fence at the opposite end. The result was confusion, with the middle rows on the plot crossing each other.

USING A GARDEN LINE

Some people prefer to keep to the conventional method of sowing and planting with the aid of a garden line. If so, the line can be plain, if the gardener wishes, or it can be knotted at intervals to mark planting distances. It is quite easy to make the knots if a short piece of stick is cut to measure the distance between them. It is important to pull each knot **very tight**, so that the intervals do not vary in length as the line is stretched. Knots every 75 millimetres are handy, because they will cater for all alternative planting distances.

Keeping your line taut

You probably have difficulty in keeping a garden line taut. For a blind gardener it is essential that the line does not bow away in the middle. Even on a narrow plot this can happen, because any gardener with impaired vision has to handle the line constantly.

We now have a way of overcoming this difficulty, thanks to the ingenuity of a gardener with no sight. You will need two 150 mm. elastic luggage ties, obtainable from a shop selling car accessories. They must be **no longer** than 150 mm. Loop the elastics, and attach one each end of your line. Looping will bring the two hooks together. If the open ends of the hooks can be closed, so much the better. When attaching the line, bind it firmly round the hooks.

The looped elastics, plus the hooks, will each stretch to 225 millimetres. This will cover the distance between the edge of your plot and the nearest vegetable planting point. Be careful that the length of your line now tallies exactly with the distance between your first and last planting points in the vegetable row.

Now, anchor a peg **very firmly** at the edge on one side of your plot. Put one of the elastic loops round it. Carry your garden line across the plot. Put your second peg through the other looped elastic. Find the exact spot for your peg and push your peg into the ground on that spot, keeping the elastic over the peg all the time.

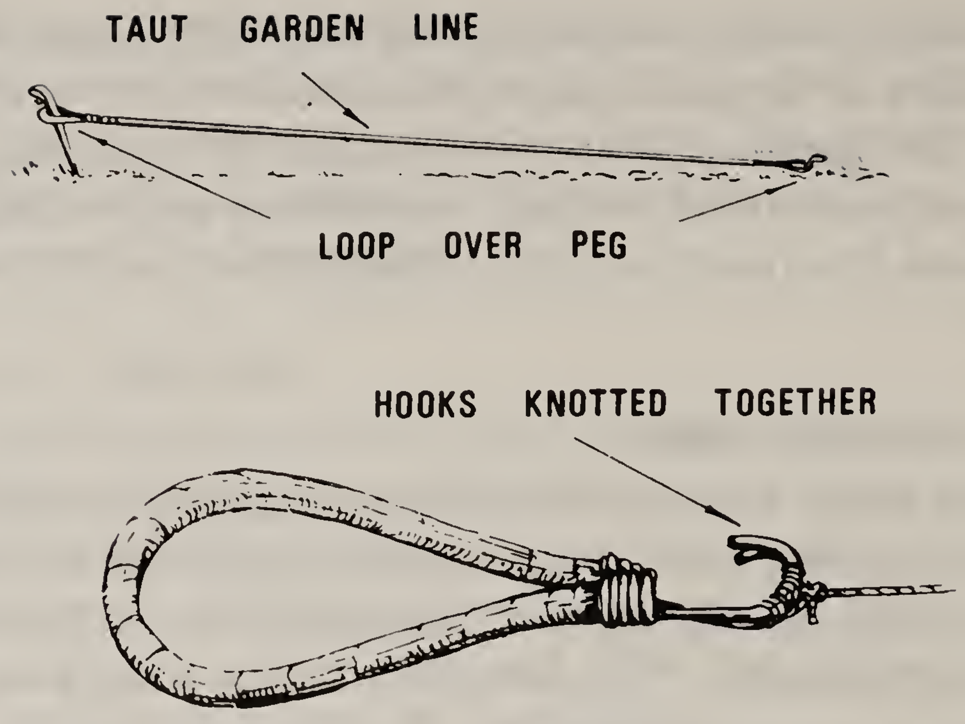


FIG.29

This will enable you to stretch the elastic and so pull the line taut while the peg is pushed into the ground. By this method you can get a really taut line. It is much better than trying to stretch the elastic over the top of the peg after driving it home. You must use long pegs, and drive them deeply into the ground, so that the tension of your line does not slacken.

STATION SOWING OF SEED

Intervals for station sowing are clearly indicated if your garden line is knotted. Obviously, the advantage of station sowing is that the impossible task of thinning out is eliminated. There could be problems about handling seed for this method of sowing, but there should be no difficulty if the seed is large. For fine seed we have the alternatives of either buying pelletted seed, or of hand-wrapping it ourselves (as described in the Section on INDOOR WORK).

PRE-SOWING OF SEED

Some blind gardeners pre-sow in plastic cups from a coffee vending machine. These cups are the same size as the bulb planter. Seedlings can then be planted, complete with soil balls, in the holes made with the bulb planter. A little fertiliser dropped in each hole then helps to produce good results by an easy method. The idea requires a certain amount of knowledge about vegetable growing. Cauliflowers, for example, have done well, but it is not suitable for a crop like parsnips which, even in the early stages, need enough room for long, tapering roots.

Other forms of pre-sowing have been given in the Section on INDOOR WORK.

WEEDING BETWEEN ROWS

Among the hints coming from visually handicapped gardeners is one relating to the use of an onion hoe for weeding between rows. If some kind of mark is left at both ends of all the rows, a garden cane can then be pegged to the ground from end to end of each row in turn, using the marks to get its position right.

The cane will then act as a guide for the hoe. By this method the spaces between rows can be cleared of weeds, without fear of damaging the vegetable plants. Weeding between the plants themselves must, of course, be done by hand.

LABELLING

Apart from braille, no other method of labelling in the garden has yet proved entirely satisfactory, so a solution to the problem still depends upon the resourcefulness of individual people. Three ideas have been either tried or suggested, but each has its limitations. One idea is to make permanent pegs for the ends of rows, each peg with a differently shaped top. Another suggestion is to cut out the shapes of vegetables, using waste material such as throw-away plastic containers. A third idea is to fix raised numbers to pegs at the ends of rows, and match these to a corresponding list of vegetables. This last idea appears to be the simplest—and it could be utilised both for indoor and for outdoor work. Perhaps you may have a good suggestion to offer?

WE CANNOT NEGLECT PRUNING

Our shrubs, our fruit trees and our soft fruit bushes or canes all need pruning—but can we do this without sight? Certainly, in the case of shrubs, the answer is "Yes." There needs to be some reservation about the pruning of fruit trees, but correct attention is possible where soft fruit bushes and canes are concerned.

In this Section we shall suggest means by which difficulties due to lack of sight can be overcome. We hope these suggestions will encourage **beginners** to do careful work, while at the same time giving help to any **experienced** gardener who may feel that confidence has been undermined by the onset of visual handicap. We shall start with some ideas regarding shrubs.

HINTS TO AID SHRUB PRUNING

We have already said that a blind gardener can, without doubt, prune shrubs. A **beginner** must, of course, first learn how and when to prune, because of the different treatment required for each kind of shrub. The hints we are giving relate **only** to methods of working without sight. Here they are:

1. Know your shrubs

The first essential is to become thoroughly familiar with each individual shrub in your garden, knowing its size, shape and habit of growth. One totally blind gardener who, without assistance, cared for over a hundred rose bushes said "They are just like people, they are all different."

Familiarity with your shrubs is, of course, easier when you have planted them yourself. You then have an opportunity to follow their growth and to learn exactly when pruning should start.

This ideal situation does not always exist, and you may have to cope with an overgrown shrub. In this case a beginner should seek advice and help. A blind gardener with experience will know what to do but may prefer to have a sighted friend at hand when tackling the initial stages of clearing tanglewood.

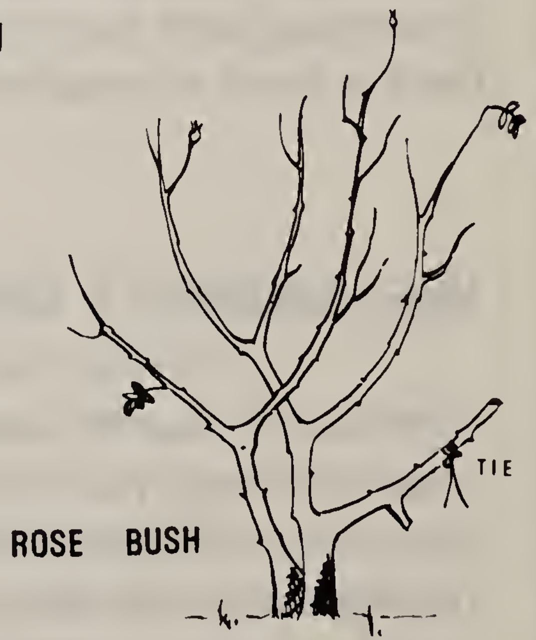


FIG.30

2. A method to save time

When a shrub is growing normally the problems are fewer. In this case, to save time and assist when shaping the shrub, mark the place where you start pruning. You can tie something round that particular branch. You will then be able to find it again quickly, in order to check the length of other branches by comparison with it. Finally, as you work round the shrub, your starting point will be very easy to locate. All you have to do is feel for the tie.

3. Uniform shape

An article written by a sighted rose-grower described his method of ensuring an even, all-round shape to his bushes. He used a stick to measure from the centre to the perimeter of the bush when pruning it. A blind gardener might work out a similar method, easier to manage without sight. A thick piece of string could be tied loosely round the stem of the bush and cut to a required length. The loose end of the string could then be tied firmly to a stick, and the stick pushed into the ground at the perimeter of the bush. This stick could be moved round the bush to new positions as pruning proceeded. This method would apply most easily to standard bushes.

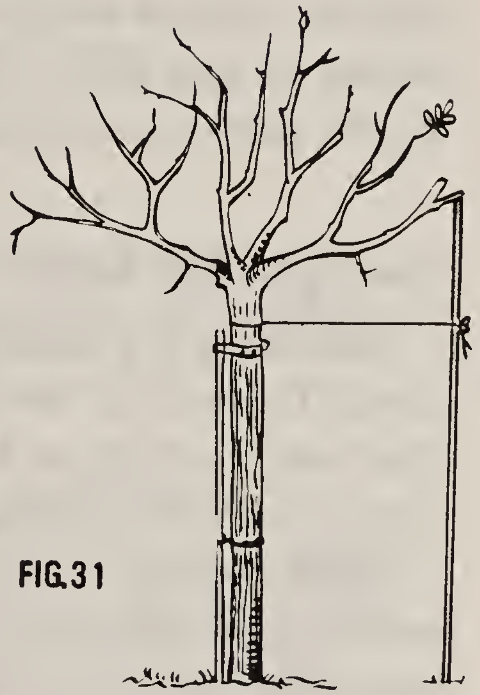
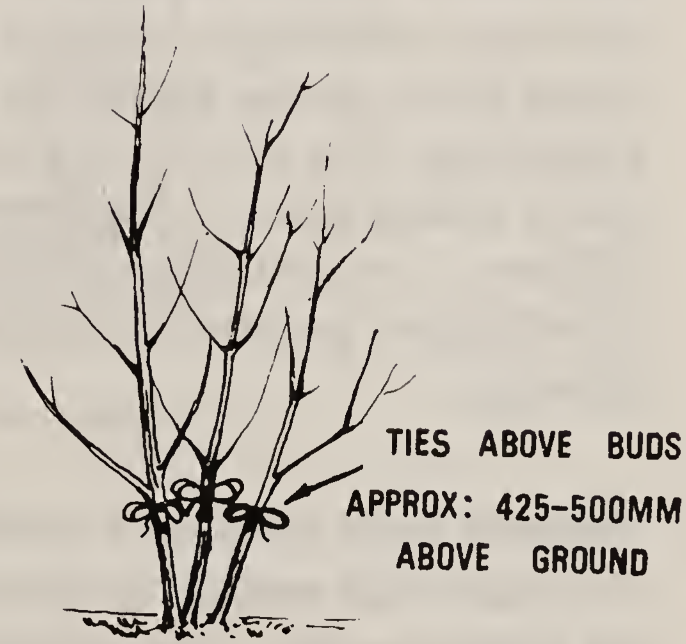


FIG.31

STANDARD ROSE

4. To gain confidence

A beginner can make mistakes, so why not adopt a method used in the training of students? Prepare a number of short pieces of string and tie these where you think pruning cuts should be made. You can then check all these points before cutting, and avoid a regrettable error. This method could also help an experienced gardener apprehensive about pruning without the aid of sight.



THE COMMON BUDDLEIA FIG.32

5. Pruning roses

Someone has to tackle this annual job. Whether or not that person is yourself is an individual matter. The writer of this booklet has heard varied opinions expressed by totally blind gardeners, from those who say a definite "No" to others who do not worry about the thorns or, rather surprisingly, say they enjoy rose pruning. Love of gardening is surely the secret.

Despite our love, most of us like to protect our hands against thorns. Gloves **can** be worn if a hole is cut under the pad of the first finger of one hand. It is then possible to feel with that finger, while at the same time other parts of the hands are protected.

Two general hints

Learning by touch It is often easier to learn the shape of a shrub by feeling from its base upwards. At times this can also be the best method of finding pruning points. Remember however, that thorns on rose bushes grow downwards, so be cautious.

Cold hands If you suffer from cold hands you may have working problems in late autumn. Some blind gardeners, wholly dependent on touch, wear mittens at this time of the year. You can also take comfort from the fact that, in any case, no pruning should ever be done on a day so cold that night frost is expected.

PRUNING FRUIT TREES

Generally speaking it is best if larger fruit trees—apples, pears and stone fruit—can be pruned by someone who has both sight and experience. It is all too easy to harm crops by mistakes. Obviously this is a wise plan for beginners. The approach might of course, be different in other circumstances—if, for example, a visually handicapped gardener previously had long experience in fruit growing.

Trained fruit trees and other special types

The well-tried method of growing apples and pears as **cordons** is to be recommended. This method can offer a means of learning how to prune, and at all times the trees are easily accessible for general cultivation and harvesting. Over the years some other types of fruit trees developed at research stations could have particular advantages for blind gardeners. As these are "specialist" trees until

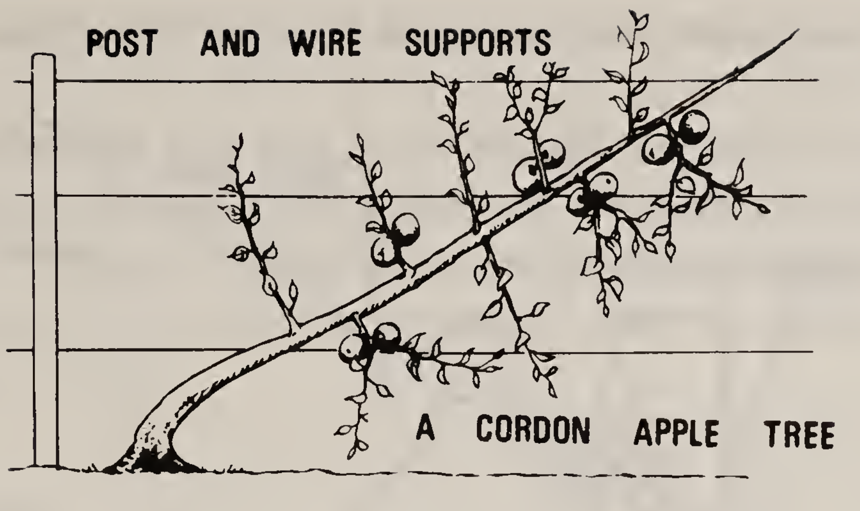
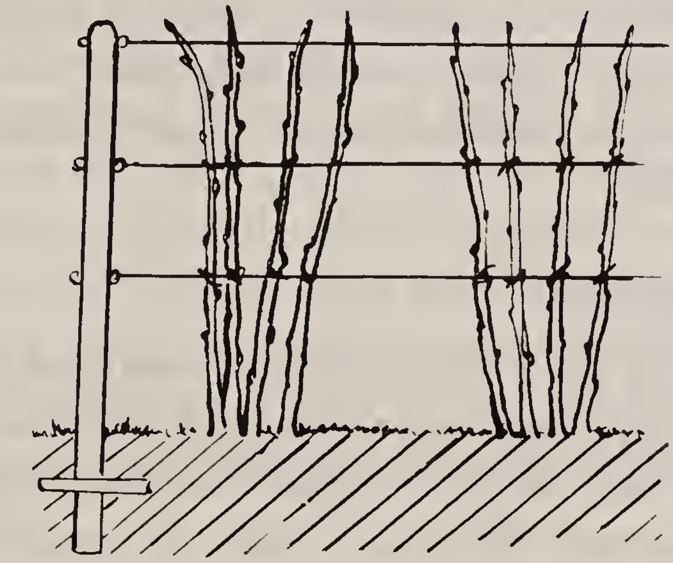


FIG.33

the type is established, we suggest that any gardener interested in different types of trees should seek professional advice for guidance.

TRAINING SOFT FRUIT CANES

The cultivation and pruning of **soft fruit** can be simplified by training. Gooseberries and red and white currants can be grown by the cordon method. Raspberries, loganberries and blackberries can be trained along horizontal wires, and so kept more easily under control. There are thornless cultivars of these last three fruits.



TRAINED RASPBERRY CANES

FIG.34

TOOLS AND EQUIPMENT

The only essential tools are secateurs, a pruning saw and a good quality knife. All must be kept sharp, especially the secateurs because they are in constant use. People with weak or arthritic hands might like to buy a pair of light-weight, ratchet secateurs.

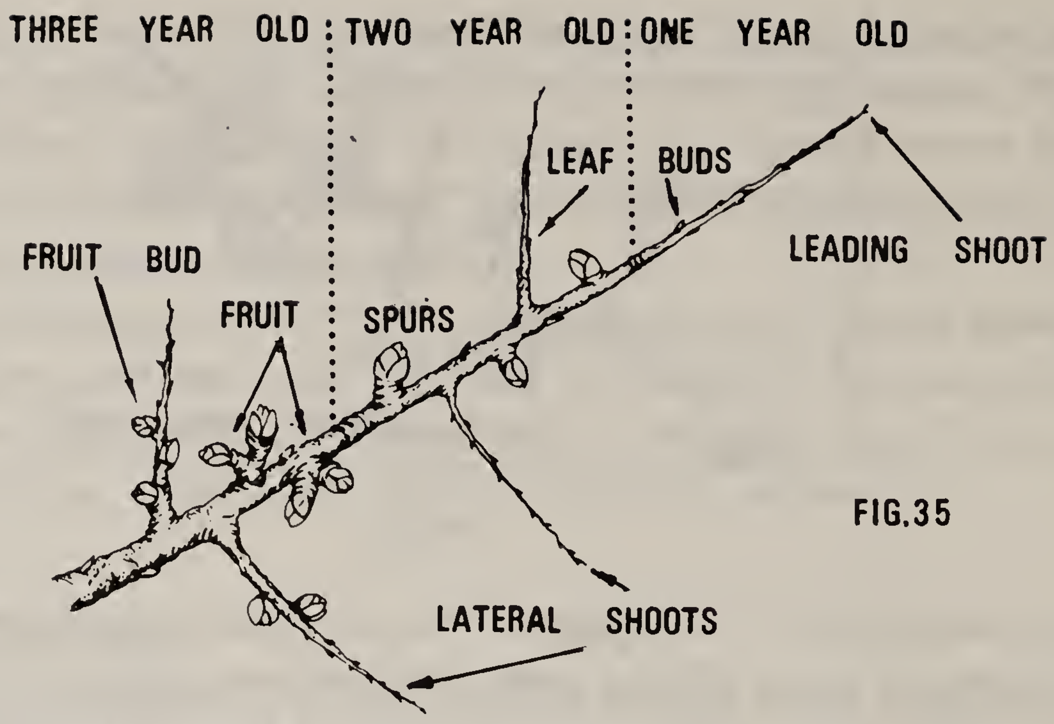


FIG.35

FEATURES FOUND ON A 3 YEAR OLD APPLE TREE

They are expensive, but they will make their cut in stages without damage to the wood of the shrub or tree.

If you have to prune wood thicker than about 25 millimetres you will need to seal the wound. At one time the only satisfactory sealing agent was based on bitumen, which was very difficult to clean from the hands. Now however, there is a good sealing agent emulsion based on latex that can be removed from the hands with clear water. No one can foresee what other product might come on the market in future.

A FINAL SUGGESTION

There may be people who would like to learn something about fruit trees, even though pruning them will be out of the question. Others may want to train their sense of touch with something that is of special personal interest. Why not, then, try studying the branch of an apple tree in winter?

It is not difficult to find a leading shoot and some lateral shoots. Feel down a leading shoot until you touch leaf buds, then on to fruit buds and fruit spurs. Leaf and fruit buds are quite different in shape, so they can easily be distinguished one from the other. You may even have some entertainment trying out the possibility of detecting the difference between first, second and third year wood.

Experiments like this **must** be carried out in the winter, when the buds are tight. As approaching spring urges the tree to burst into blossom there is danger that fruit buds could be knocked off and the crop spoilt.

Little touch tests like this can be extended to other fruit trees during the dormant period, adding interest to your picture of the garden scene. The experiment could even prove of lasting value if you are a gardener at the point of coming to terms with loss of vision. It is worth a trial!

CONTROL OF PESTS AND DISEASES

This is a very real problem, as it is a part of garden work in which a blind person cannot be wholly self-reliant. It is possible to discover by touch some evidence that all is not well (for example, finding curled leaves, honeydew, or signs that a plant is becoming sick). However, by the time indications such as these are present the pest or disease has gained a hold. A blind gardener's real need is to have a friend who can see to detect the **onset** of trouble, when it can be treated effectively.

Despite this problem, there is no reason for anyone without sight being forced to accept entire defeat. The control of pests and diseases can be approached from other angles that are not completely dependent on vision. You can, for instance:

1. Gather information about pests and diseases which could **perhaps** attack your plants. This need not imply that they are **bound** to attack them, so there is no call for apprehension and worry. You will simply be aware of any adverse **possibilities** with certain plants, and can learn how to prevent or control them.
2. You can quite positively undertake the work of prevention by keeping plants healthy, by means of good hygiene, correct nutrition, and the right growing conditions. Although such care cannot be a complete guarantee against attack, it will certainly contribute towards increased resistance.
3. You can do preventive spraying. This can operate in the spring. In the case of pests, a spray jet can be aimed at the places where insects lay their eggs. It is possible for a visually handicapped person to do this, because the favourite spots for

egg-laying are known. Another method of preventing problems in later months is to spray against fungus, such as mildew, during the spring. There are preparations on the market for the purpose, to be used on plants recognised as subject to mildew or other specific fungal diseases.

SAFE SPRAYS

Safety in the use of insecticides requires careful thought. Blind gardeners with guide dogs are naturally cautious. Then we also have to consider the possibility than an insecticide sprayed on a shrub could, by accident, fall on flowers in an adjacent bed. In these circumstances some chemicals could kill the plants in the bed. We cannot, of course, forecast future developments, but we can give guidance regarding insecticides and fungicides on the market at present that are recognised as safe. These are sold under proprietary names, but are **based** on one or other of the following:

Derris
Pyrethrum
HCH (formerly BHC)
Carbaryl

Synthetic pyrethroids, such as:
Resmethrin
Permethrin

Even these need careful use, according to the stated directions. For instance, edible plants sprayed with derris must not be eaten until one day after spraying. Also, if soil has been sprayed, guide dogs should be kept away for a while.

Because the seven products on our list are harmless, their effectiveness wears off fairly quickly. They will therefore need to be used more frequently than others based on strong chemicals. It must also be remembered that insects can become immune to a particular spray, so the type used must be varied from time to time.

SYSTEMIC INSECTICIDES

People often enquire about systemics because reference is constantly made to them in broadcast talks. This form of insecticide is particularly valuable against greenfly and several other sap-sucking insects. The directions and precautions given for its use **must** be **strictly** observed.

PUFFER PACKS

If used on a calm day there are many occasions when dust distributed by means of a simple puffer pack can be just as effective as a wet spray.

FUNGICIDES

These in general are safer than insecticides, as they are less powerful. Products based on benomyl are effective for all stages of plant disease.

MEASURING OF PRODUCTS FOR WET SPRAYS

The Royal National Institute for the Blind sells an adaptation of a small clinical syringe for use by blind gardeners when measuring required quantities for making up wet sprays. This type of dispenser is useful for any product sold in a bottle with the cap of the bottle intended as a measure. Now, however, so many products are sold in sachets that the time might come when all products for spraying are marketed in easy-to-use sachet form.

JUDGING DISTANCE FOR SPRAYING

A gardener without sight may be apt to hold a sprayer too close to the foliage. The force of the jet can then damage the foliage. Apart from the harm caused, a jet emitted at close range is wasteful. In order to gauge correct distance an inventive blind gardener has devised a little gadget which consists of a metal rod run through a holder. The entire gadget is quite light and is made from non-corrosive metal. The rod is slightly longer than 300 mm. It slides into the holder through a hole and is held in place by a thumb screw. A second hole under it takes the lance of a standing sprayer or the similar part of a large hand sprayer. We are calling this little gadget a SPRAY GAUGE, because it measures the correct distance between the nozzle of your lance and the foliage you are spraying. With that distance accurate, the jet from your sprayer can operate to the best advantage. Fitting the gauge on your lance is quite simple. Unscrew the nozzle at the end of the lance and take off the washer. Your lance will then slide through the hole in the gauge, under the rod in the upper hole. Replace the washer, screw on the nozzle, and draw it into position **close** to the hole. Tighten the thumb screw which will keep it in place. You now have the lance protruding **one side** of the gauge holder, and the measuring rod protruding the **other side**. This means that the nozzle will be 300 mm. away from the foliage and the jet from the nozzle will be distributed as a fine spray—which is correct.

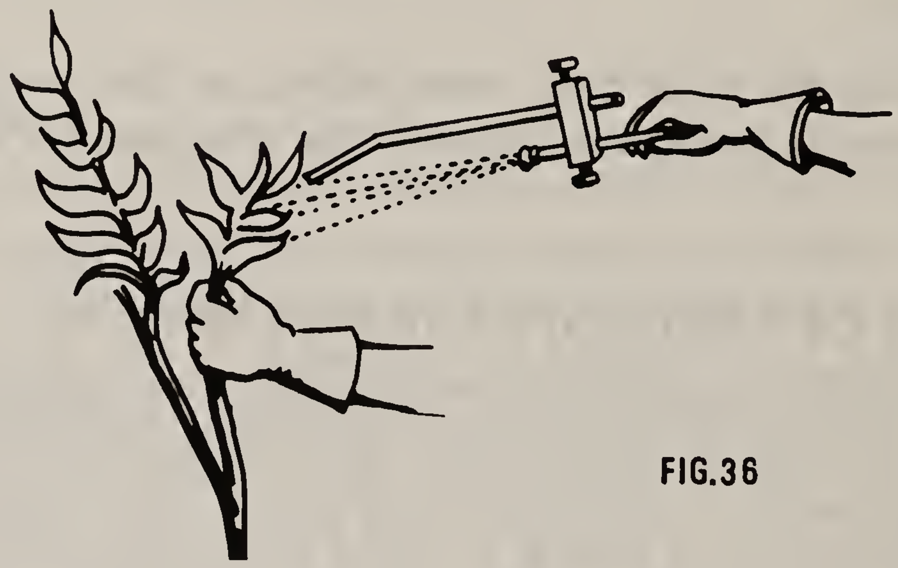


FIG.36

The rod of your gauge is bent down near the end. This bend brings the point of the rod to the middle of the jet, and so helps you to direct an accurate aim. With one hand you can locate the foliage and hold it. With the other hand bring the point of the rod to the foliage, then operate the jet.

PROTECTIVE CLOTHING

When spraying you should protect your face (particularly your eyes) wear a mackintosh and, **most certainly**, thin rubber gloves. It is quite possible to feel through gloves of the disposable type and, though called disposable, they will last for a reasonable length of time. It is wiser to be cautious than take risks, even with harmless insecticides.

OTHER SPRAYS

To finish this Section with an encouraging thought, we can recall that our spraying need not always be for the purpose of killing **insects**. **Foliar feeding** can be given effectively as a spray. Some directions state that it can be distributed by means of a watering can, but this seems rather a wasteful method. Spraying will take longer, but it could be more thorough if carefully operated.

PRACTICE

Practice for all operations must be advocated. Whatever type of sprayer you have, experiment with clear water. Try the jet against a wall to gauge distance. Then try it on your shrubs to discover how best to aim the jet at the right places. Clear water can do no harm.

SOME MISCELLANEOUS ITEMS OF INTEREST

PARTIALLY SIGHTED GARDENERS

Reference has not yet been made in this booklet to the special needs of gardeners with partial sight. Some of the ideas we have described may be helpful, but in addition there is the suggestion that a pot of white paint can be an asset. Fences, posts and handles of tools painted white give useful aid to all people with impaired vision. (The writer knew one partially sighted gardener who even painted the toes of his boots white!)

GREENHOUSE THERMOMETER

There is an inexpensive maximum/minimum thermometer now on the market with centigrade figures clear enough to be read by a gardener whose vision is defective, or by anyone who uses a low vision aid for reading. It is also simple to understand by anyone unaccustomed to reading a thermometer. The dial is in the form of an arc, with clear pointers indicating the temperature reading, and resetting is operated just by slight pressure on the outer cover.

Adaptation of this instrument for reading by touch and sound has been devised, but the delicate work involved increased costs beyond reasonable limit. Work is in progress however, to give touch and sound readings on another type of thermometer and this instrument could very easily be made greenhouse proof on request. It would give temperature recording at the time of reading only, but this is adequate for most people. Blind gardeners interested should contact the Royal National Institute for the Blind.

LOCATING DEVICE

In our previous Sections several references have been made to the Sound Beacon (so particularly useful as a lawn-mowing aid) which is obtainable from the Royal National Institute for the Blind. There is another locating device called the "Homer," which is commercially produced. This little instrument is silent until a clap of the hands stimulates an audible signal. It can therefore be placed at some required spot to which the gardener wishes to return at intervals (such as the compost heap when using compost for mulching) and there is no continuous bleep.

A GUIDE ROPE WHICH COSTS NOTHING

Some years ago a totally blind lady took over her husband's allotment and found difficulty in keeping within its area. She solved her problem by making a rope from old tights and stretching it between posts at the four corners of the plot. This gardener is not the only one to discover such a use for old tights. Recently a sighted friend had a similar idea, and she demonstrated how the rope could be made. Taking three legs, cut from old tights, she plaited them, starting from the toes. Further pieces could be joined in, according to the length of rope required. Because the material stretches the joins will hold after plaiting, and the completed rope looks very neat.

CONCLUSION

A fitting conclusion to GARDENING WITHOUT SIGHT is an expression of sincere appreciation and gratitude to all the blind gardeners who have been the source of the ideas it contains, also to the teachers of horticulture who have given their guidance and professional advice.

It is important to combine methods which overcome difficulties due to visual handicap with standards of good gardening. An illustration of this dual approach is the emphasis laid on working from a straight edge with right-angles made to retain their accurate shape. A little special equipment, carefully selected, can be a valuable aid to the success of crops and to the appearance of the garden, as well as helping self-reliance. All these assets bring satisfaction to the individual concerned and can earn for the visually handicapped gardener an equal place among neighbours and friends.

What better than a garden you have made easy to work and a pleasure for your sighted friends to visit—and, if you are a vegetable grower, crops that are good to eat!

If you have any ideas to pass on we shall welcome them—**if you have problems let us know.**

WHERE TO GO FOR MORE INFORMATION

The Sports and Recreations Officer, RNIB, will be happy to help with gardening questions, so will the Secretary of the Advisory Committee for Blind Gardeners at the Southern and Western Regional Association for the Blind, 55 Eton Avenue, London NW3.

Some of the equipment referred to in GARDENING WITHOUT SIGHT is included in RNIB's catalogue and is sold to blind people by RNIB at subsidised prices. Other aids are available from shops and gardening centres.

The Southern and Western Regional Association for the Blind organises weekend courses for blind gardeners and day seminars for helpers.

Readers may like to know about "The Gardener" (a braille and tape quarterly) and the Cassette Library for Blind Gardeners. Details from RNIB or SWRAB.

GARDENING WITHOUT SIGHT is available in print and on tape and a braille edition is in preparation. Single copies are free to blind people. There is (at 1982) a 50p charge to cover the cost of postage and packing of the print edition.

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